

# **EXHIBIT 9**

**UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA**

**Jeff Young,**

Plaintiffs,

v.

**Cree, Inc.,**

Defendant.

Case No. 4:17-cv-06252-YGR

**EXPERT REPORT OF  
LYNNE J. WEBER, Ph.D.**

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## **I. INTRODUCTION**

1. I have been retained by counsel for Cree, Inc. (“Cree” or the “Defendant”) to design, implement and analyze the results of a market research survey. My opinions based on the results of my survey are described in this report.

2. My opinions are based upon the data and information listed in Appendix A and/or cited in this report, as well as my knowledge, skill, experience, training and education in the relevant fields. I reserve the right to update, supplement, or revise my opinion if and when additional information or data becomes available for my review, such as any additional information obtained from the Plaintiff or in discovery, new opinions from the Parties’ experts or information from third parties, which could warrant supplementation or revision of this opinion. For example, I reserve the right to update, supplement, or revise my opinion to the extent necessary following any subsequent reports or depositions of Plaintiff’s experts.

3. I anticipate being called to provide expert testimony at trial regarding the opinions resulting from my evaluation and analysis. In support of my opinions at trial, I anticipate using some of the documents referenced in Appendix A or elsewhere in this report, as well as other documents and testimony that may be produced during the course of this proceeding (including any of the deposition testimony I reference above or any testimony from trial). I also reserve the right to prepare any exhibits and/or other demonstrative evidence to be used at trial and/or as needed.

## **II. QUALIFICATIONS**

4. I am a Managing Director in the Silicon Valley office of Duff & Phelps, LLC. Duff & Phelps is a global valuation and corporate finance advisory firm, with expertise in



complex valuation, dispute consulting, M&A and restructuring. Duff & Phelps has more than 3,000 employees serving clients worldwide through offices in North and South America, Europe and Asia.

5. I have more than 35 years of professional experience in market analysis, market research, market modeling and quantitative analysis. I have led more than 200 ordinary course of business engagements in which I have helped my clients make key decisions for their businesses, including but not limited to decisions on the launch of offerings with new features, on offering design, on pricing, on marketing and business strategy, on advertising messaging, on distribution channels, on warranties, on investments and on transactions. My market research experience includes managing over 200 market research studies involving web, phone, mail, email, focus group, personal, in-store, and central site interviews, conducted in the U.S., Canada, Europe and Asia. I also have expertise in customer behavior, with my experience including building over 100 models of customer behavior, moderating more than 200 focus groups, and conducting and/or managing market research studies encompassing thousands of interviews of consumers, channel participants, end users, and business decisionmakers. I work cross-industry and have led engagements in dozens of industries, including the consumer products industry.

6. I have testified as an expert witness in deposition, arbitration hearings or trial in approximately twenty matters. With respect to U.S. federal court matters, I have submitted approximately 19 expert reports, testified in deposition approximately 13 times and testified at trial twice. I have been accepted as a survey expert and as a statistics and data analytics expert in U.S. federal court.

7. My education includes a Ph.D. in Operations Research and a Master's degree in Statistics, both from Stanford University, and a Bachelor's degree in Mathematics from Cornell University.

8. A lengthier description of my education, professional history, and qualifications, as well as the publications I have authored within the last 10 years or more and the testimony I have provided as an expert witness in trial and depositions within the last 4 years, are set forth in my *curriculum vitae*, a copy of which is attached as Appendix B.

9. Duff & Phelps is being compensated for my time in this matter at the rate of \$745 per hour. My expenses arising from my involvement in this case are being reimbursed. No portion of Duff and Phelps' fees is dependent upon the outcome of this case.

### III. BACKGROUND

10. On April 30, 2018, Plaintiff filed an amended class action complaint (the "Complaint") for "unfair and deceptive practice of, among other things, promising consumers that its LED lightbulbs ... will last for particularly long periods of time up to 35,000 hours" against the Defendant.<sup>1</sup> According to the Complaint, "These longevity representations are prominently made on the principal display panel of the Lightbulbs and are viewed by every consumer at the point of purchase. In reliance on those representations, consumers paid and continue to pay a premium for the LED Lightbulbs."<sup>2</sup> Also according to the Complaint, "Cree's packaging offers a '100% Satisfaction Guarantee' for LED Bulbs and an estimated lifetime of between 15-32 years depending on the product. The packages further offer an estimated yearly

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<sup>1</sup> Amended Class Action Complaint in the matter of *Jeff Young, individually and on behalf of all other similarly situated v. Cree Inc.*, Case 4:17-cv-06252-YGR (Northern District of California, San Francisco Division, April 30, 2018). See specifically paragraphs 1 and 10.

<sup>2</sup> *Ibid*, para. 1.

energy cost savings ranging from around \$0.60 to \$2 per bulb per year. Cree packaging also offers a ‘10 Year Warranty.’”<sup>3</sup>

11. The Complaint also alleges that “Cree’s claims regarding the longevity of the LED Lightbulbs are false. The LED Lightbulbs do not last nearly as long as advertised.”<sup>4</sup> The Complaint purports to include “a small sample [6] of customer complaints made on the Internet” with comments about Cree LED (light emitting diode) light bulbs failing within a period of months to a little over two years.<sup>5</sup> The Complaint alleges that the Plaintiff personally purchased “3 Cree 100 Watt Standard A-type bulbs on or around April 2015 from Walmart” which burned out within “months.”<sup>6</sup> Plaintiff’s Renewed Motion for Class Certification alleges that “In approximately April 2015, Plaintiff purchased three 100W replacement dimmable LED Lightbulbs from Home Depot in Windsor, California” which “burned out within 6 months to a year of use.”<sup>7</sup>

12. It is my understanding that the Plaintiff has identified certain statements found on certain Cree LED lightbulb packaging, including certain 60 watt replacement and 100 watt replacement packaging,<sup>8</sup> that Plaintiff has alleged to be problematic.

13. According to Plaintiff’s Renewed Motion for Class Certification, “Before purchasing the LED Lightbulbs, Plaintiff reviewed the representations on the label[.]”<sup>9</sup> This motion also alleges that “The packaging for every LED Lightbulb at issue makes longevity and performance claims in at least one of three areas: (1) energy and cost savings, such as ‘82% Less

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<sup>3</sup> Ibid, para. 4.

<sup>4</sup> Ibid, para. 7.

<sup>5</sup> Ibid, para. 35. Note that the last bullet in this list of alleged complaints refers to a Facebook post (<https://www.facebook.com/atka1971/posts/10156193064939672:0>) dated September 27, 2017, which is about 2 years and 4 months after an alleged purchase of Cree lamps on May 24, 2015.

<sup>6</sup> Ibid, para. 36-37.

<sup>7</sup> Plaintiff’s Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, pp. 9-10.

<sup>8</sup> Complaint, para. 21. See also para. 18, with pictures of, e.g., a CREE 60 watt equivalent LED lightbulb package.

<sup>9</sup> Plaintiff’s Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, p. 10.

Energy Consumption’ and ‘\$226 Lifetime Energy Savings’; (2) longevity and performance comparisons to other LED bulbs, such as ‘Our LED bulbs work better and last longer’; and (3) ‘100% Satisfaction Guarantee.’”<sup>10</sup>

14. I also understand that the Court has ruled that “plaintiff’s claims are preempted to the extent that such claims arise from ... statements which merely reiterate the information required to be disclosed on the ... Lighting Facts label ... includ[ing] representations regarding the ‘estimated lifespan of the light bulb.’”<sup>11</sup> I understand that Defendant’s motion to dismiss was granted with respect to such statements.

15. The Complaint also makes allegations against statements allegedly found on various websites or in Cree’s internet and television advertising.<sup>12</sup> However, my understanding is that Cree’s consumer LED light bulbs are mostly sold through brick-and-mortar Home Depot stores.<sup>13</sup> Moreover, Cree has never sold consumer light bulbs through Cree’s own website<sup>14</sup> and I am not aware of any allegation by Plaintiff that a substantial proportion of consumers who purchase Cree LED lightbulbs actually saw the accused internet or television advertising.<sup>15</sup> For these reasons, the scope of my work focused on accused statements allegedly found on certain Cree LED lightbulb packaging.

16. I understand that there are disputes among the parties as to whether certain statements on Cree’s LED lightbulb packaging are false. I have no opinions on this issue.

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<sup>10</sup> Plaintiff’s Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, p. 3.

<sup>11</sup> Order in this matter on Motion to Dismiss, dated April 9, 2018, pp. 8-9.

<sup>12</sup> Complaint, para. 30, 32.

<sup>13</sup> Interview of Scott Schwab, January 8, 2020 and Declaration of Phil Primato, February 14, 2020.

<sup>14</sup> Declaration of Phil Primato, February 14, 2020.

<sup>15</sup> Specific to Plaintiff’s own experience, Plaintiff’s Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019 states only that Plaintiff “may have also viewed television advertisements regarding Cree LED Lightbulbs” and does not indicate that the Plaintiff saw any internet advertising for Cree products (see p. 10).

17. I understand that Plaintiff seeks a class period for this matter “during the period from March 2013 to the present.”<sup>16</sup>

#### IV. DESIGN, EXECUTION AND RESULTS OF THE SURVEY

##### 4.1 Survey design

18. I was asked by counsel to design and conduct a survey to measure whether or not the presence of certain statements on the package is likely to positively impact the purchase decision for Cree LED light bulbs. I was also asked to measure whether or not the presence of these same statements on the package is likely to impact consumers’ expectations for the life length of Cree LED light bulbs.

19. The design of a survey addresses who will be interviewed, the methodology for the survey, and the questions to be asked. For this case, the design of the survey was informed and supported by my knowledge of survey design principles and issues, my experience designing and conducting surveys, my review and analysis of the documents and websites mentioned below and in Appendix A, a visit by me to a Home Depot store where I purchased Cree LED light bulbs, and by a discussion with Cree’s former Vice President and General Manager for its consumer LED bulbs business, Scott Schwab.<sup>17</sup>

20. I designed the survey in accordance with the principles stated in the Federal Judicial Center's *Manual for Complex Litigation*, specifically to ensure that:

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<sup>16</sup> Plaintiff’s Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, p. 1.

<sup>17</sup> Per the Declaration of Scott Schwab dated March 22, 2019, as of that date Mr. Schwab was employed by Cree as its Vice President and General Manager Lamps. Mr. Schwab had been employed by Cree in the business unit responsible for design and production of LED consumer lighting products ever since Cree began producing consumer LED bulbs, which are sometimes called “lamps,” in 2013. Between 1994 and 2013, Mr. Schwab held roles in business management, product management, sales and marketing, among others. Per my discussion with Mr. Schwab, he retired from Cree in May of 2019.

- The population was properly chosen and defined
- The sample chosen was representative of that population
- The data gathered were accurately reported
- The data were analyzed in accordance with accepted statistical principles
- The questions asked were clear and not leading and
- The process was conducted so as to ensure objectivity.<sup>18</sup>

21. I designed the survey, the questionnaire for which is provided in Appendix C, to interview a representative sample of U.S. adults who (1) personally purchased an LED light bulb in the past 12 months, (2) would consider purchasing products such as LED light bulbs at Home Depot, and (3) would consider purchasing 60 watt equivalent and/or 100 watt equivalent LED light bulbs. Candidate survey participants were also screened for decision-making involvement in the most recent purchase of an LED light bulb purchase for their home.

22. The survey focused on purchase decisionmakers for 60 watt equivalent and 100 watt equivalent LED light bulbs for several reasons. First, it is my understanding that Cree sells many different types of consumer LED light bulbs. In particular, since 2013, Cree has manufactured “several families of consumer LED bulbs, including A-type, reflector, downlight and surface mount, and candelabra bulbs.”<sup>19</sup> Given my experience conducting surveys, and the need for this survey to have adequate sample sizes for statistical testing, in my opinion it would have been impractical (and perhaps even infeasible) to conduct the survey on all these different types of LED light bulbs. This is especially so for types of LED light bulbs that are not popular. Second, my understanding is that currently, 60 watt equivalent LED light bulbs and 100 watt

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<sup>18</sup> *Manual for Complex Litigation, Fourth Edition*. Federal Judicial Center (2004), p. 103.

<sup>19</sup> Declaration of Phil Primato dated March 22, 2019, para. 8.

equivalent LED light bulbs are the #1 and #2 largest sellers for Cree's consumer LED light bulbs.<sup>20</sup> For these reasons, the survey focuses on purchase decisionmakers for 60 watt equivalent and 100 watt equivalent LED light bulbs.

23. The survey focused on consumers who would consider purchasing LED light bulbs from Home Depot because Cree's consumer LED bulbs "are sold almost exclusively through Cree's online and brick-and-mortar retail partners The Home Depot ('THD') and www.amazon.com ('Amazon')."<sup>21</sup> Moreover as of May 2019, "the vast majority of Cree's consumer bulb sales are [sold] via THD's brick-and-mortar locations and website."<sup>22</sup> Scott Schwab estimated in January 2019 that for Cree's consumer LED light bulbs, "our [current] sales to Home Depot is roughly 85 percent."<sup>23</sup> Also, according to Scott Schwab, as of the date of his retirement in May 2019 most of Cree's consumer LED light bulbs were sold via Home Depot's brick-and-mortar stores.<sup>24</sup> The proportion of sales of Cree's consumer light bulbs through physical Home Depot stores has trended downward over time, from roughly 99% in 2014 to currently approximately 85-90%.<sup>25</sup>

24. The specific qualification criteria for the survey were as follows:

- The respondent is using a desktop PC, laptop PC or tablet to take the survey<sup>26</sup>
- At least 18 years of age (Q1)

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<sup>20</sup> Interview of Scott Schwab, January 8, 2020. See also Declaration of Phil Primato, February 14, 2020.

<sup>21</sup> Declaration of Phil Primato dated March 22, 2019, para. 4.

<sup>22</sup> Declaration of Phil Primato dated March 22, 2019, para. 13.

<sup>23</sup> Deposition of Scott Schwab dated January 4, 2019, p. 27.

<sup>24</sup> Interview of Scott Schwab, January 8, 2020.

<sup>25</sup> Declaration of Phil Primato, February 14, 2020.

<sup>26</sup> The panel providers routinely implement this criterion by detecting the device type when the respondent attempts to enter the survey. If the respondent attempts to enter the survey using a smartphone or other (smaller-than-tablet) mobile device, they are instructed with a panel-specific variant of the following message: "Sorry, your device cannot be used for this survey. Please close this window and go to a desktop, laptop computer, or tablet device. Once you are at one of these devices, click on the same invitation to take this survey." See Appendix C, p. 2.

- Neither the respondent nor any member of their household currently works for a light bulb manufacturer (Q4)
- Has personally purchased an LED light bulb in the last 12 months (Q5)
- Was the primary decision-maker or actively involved in the decision for the most recent purchase of an LED light bulb for their home (Q6)
- Considers purchasing household products such as LED light bulbs from Home Depot (Q8)
- For their future purchases of LED light bulbs for their home, will consider 60 watt equivalent, 100 watt equivalent, or both (Q9).

25. The screening portion of the survey also collected demographic information on age (Q1) and gender (Q2), and the panel provider transferred previously-collected information on state (where available)<sup>27</sup> and region which was appended to the survey.

26. Respondents who will consider 60 watt equivalent LED light bulbs for their future purchases of LED light bulbs for their home were qualified to see questions related to Cree's 60 watt equivalent LED light bulbs. Respondents who will consider 100 watt equivalent LED light bulbs for their future purchases of LED light bulbs for their home were qualified to see questions related to Cree's 100 watt equivalent LED light bulbs. Respondents who were qualified to see both 60 watt equivalent and 100 watt equivalent LED light bulbs saw both sets of questions, with the ordering (60 watt equivalent vs. 100 watt equivalent) randomized.

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<sup>27</sup> Two respondents did not have panel data on state (or District of Columbia, armed forces or territory). Region data was available for all respondents.



27. As explained above, most of Cree's consumer LED light bulbs are sold via Home Depot's brick-and-mortar stores. For this reason, the survey focused on packages resembling those that consumers would see in the store.<sup>28</sup>

28. My understanding is that Cree 60 watt equivalent LED light bulbs are typically sold in a package of two bulbs and Cree 100 watt equivalent LED light bulbs are typically sold in a single pack (a package with one bulb).<sup>29</sup> Therefore, these are the respective quantity packages used in the survey.

29. According to Plaintiff's Renewed Motion for Class Certification, "The packaging for every LED Lightbulb at issue makes longevity and performance claims in at least one of three areas: (1) energy and cost savings, such as '82% Less Energy Consumption' and '\$226 Lifetime Energy Savings'; (2) longevity and performance comparisons to other LED bulbs, such as 'Our LED bulbs work better and last longer'; and (3) '100% Satisfaction Guarantee.'"<sup>30</sup> In accordance with these three categories of accused packaging statements, Counsel provided the following list of statements to be tested (the "Tested Statements"):

- 82% LESS ENERGY CONSUMPTION (footnoted "At \$0.11 per kWh<sup>31</sup> when compared to [60W or 100W, as appropriate] incandescent. 25,000 hour lifetime.")
- Our LED bulbs work better and last longer; LONGER LIFE
- 100% SATISFACTION GUARANTEE

<sup>28</sup> Consumers who purchase online at Home Depot's or Amazon's website also have the opportunity to view the packaging. See, e.g., <https://www.homedepot.com/p/Cree-60W-Equivalent-Soft-White-2700K-A19-Dimmable-Exceptional-Light-Quality-LED-Light-Bulb-2-Pack-TA19-08027MDFH25-12DE26-1-12/303880968> and <https://www.amazon.com/Cree-Watt-Soft-White-2-Pack/dp/B07D2KPNCT>.

<sup>29</sup> Interview of Scott Schwab, January 8, 2020 and Declaration of Phil Primato, February 14, 2020.

<sup>30</sup> Plaintiff's Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, p. 3.

<sup>31</sup> kWh is an abbreviation for kilowatt hour, a measure of energy.

- \$226 LIFETIME ENERGY SAVINGS (footnoted “At \$0.11 per kWh when compared to [60W or 100W, as appropriate] incandescent. 25,000 hour lifetime.”)

30. The Declaration of Phil Primato provides information about which, if any, of these types of statements appeared on the package for each A19 60 watt equivalent and each A21 100 watt equivalent LED light bulb product at issue in this matter.<sup>32</sup> Note that per this Declaration, when either of the statements “Our LED bulbs work better and last longer” and “LONGER LIFE” appears on the package of an A19 60 watt or an A21 100 watt equivalent LED light bulb product at issue, both of these statements appear on that package. For this reason it was appropriate to test the joint presence or absence of these two statements.

31. In order to isolate the impact of these statements on purchase likelihood for Cree LED light bulbs, I designed a purchase likelihood question and developed a test-and-control design. In a test-and-control design, respondents are randomly assigned to groups, with each group seeing either one of the test versions of the product packaging (a version with one or more of the Tested Statements) or the control version of the product packaging (a version without the Tested Statements). By comparing the mean purchase likelihood result for a test version with that for the control version, whether or not the presence of the Tested Statements is material to the consumers’ purchase decision, i.e., whether it is likely to increase the likelihood of purchase, can be determined.<sup>33</sup> Such an experiment isolates the impact of the differences between the test and control versions from other impacts on the purchase likelihood, including other elements of

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<sup>32</sup> Declaration of Phil Primato, February 14, 2020.

<sup>33</sup> “It is possible to adjust many survey designs so that causal inferences about the effect of ... an allegedly deceptive commercial become clear and unambiguous. By adding one or more appropriate control groups, the survey expert can test directly the influence of the stimulus.... the effect of the commercial’s allegedly deceptive message is evaluated by comparing the responses made by the experimental group members with those of the control group members.... the difference.... can be attributed only to the allegedly deceptive message. Without the control group, it is not possible to determine how much of the [experimental group’s responses] is attributable to respondents’ preexisting beliefs or other background noise.” Diamond (2011), pp. 398-399.

the packaging, the price, a consumer's preexisting impressions or knowledge, guessing, and noise (controlling, for example, for inattention, hitting the wrong key by mistake, yea-saying, or misinterpretation of the question). Similarly, by comparing the mean purchase likelihood results of two test versions that differ only in that one Tested Statement is included on the associated package of one of the test versions but not the other, whether or not the presence of that Tested Statement is material to the consumers' purchase decision can be determined.

32. My understanding is that no accused 60 or 100 watt equivalent Cree LED light bulb has all of the Tested Statements on the same package.<sup>34</sup> In order to test the impact of all the Tested Statements, an image of a package needed to be created with all those statements. The starting point was the current packaging, which I understand was modified by Cree's packaging vendor to add two statements that are not on the current packaging: "82% LESS ENERGY CONSUMPTION" and "\$226 LIFETIME ENERGY SAVINGS,"<sup>35</sup> each referring to a footnote that says "At \$0.11 per kWh when compared to [60W or 100W, as appropriate] incandescent. 25,000 hour lifetime."<sup>36</sup>

33. To illustrate the current packaging (with lower resolution images than were used for the survey), shown below are photos I took of a 60 watt equivalent CREE LED light bulb package I personally purchased at a Home Depot store on December 28, 2019.<sup>37</sup>

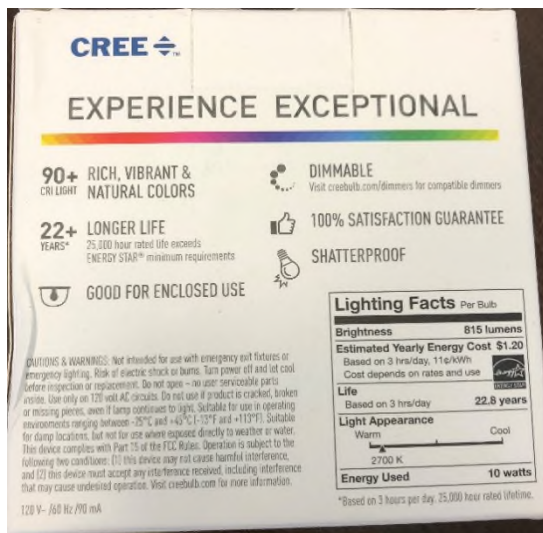
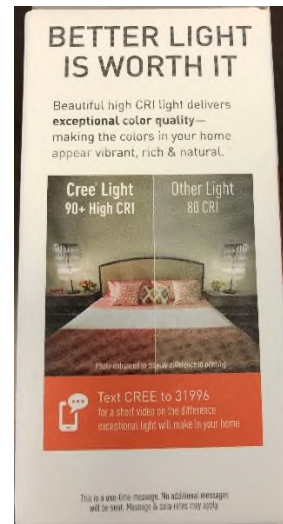
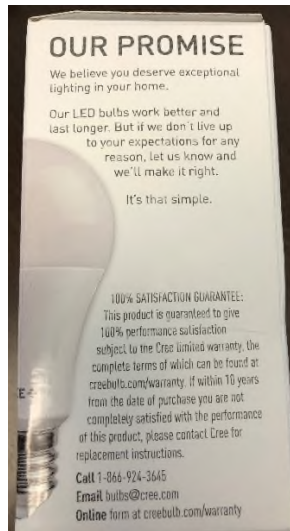
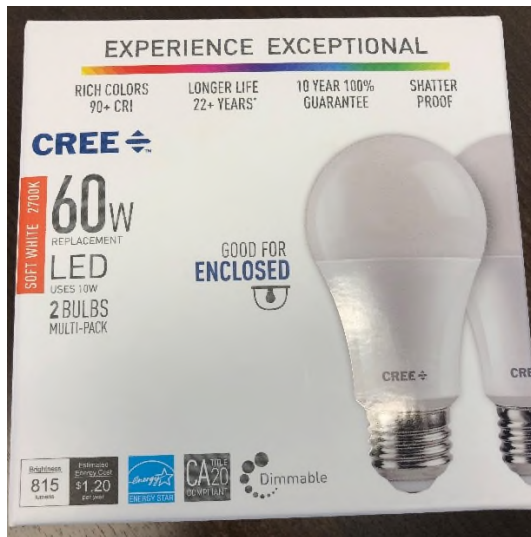
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<sup>34</sup> See the Declaration of Phil Primato, February 14, 2020 for which of these types of statements appeared on the package for each A19 60 watt equivalent and A21 100 watt equivalent LED light bulb product at issue in this matter. Note that some of the packages for products at issue have none of these statements on the package.

<sup>35</sup> These two statements are not on the Cree 60 watt equivalent and 100 watt equivalent LED light bulb packages that I bought at Home Depot on December 28, 2019, nor did I see them on the current such packages shown on the Home Depot website when I visited homedepot.com on January 19, 2020.

<sup>36</sup> For the remainder of this document, I will not always reiterate the presence of this footnote. However, all references to the "82% LESS ENERGY CONSUMPTION" statement and the "\$226 LIFETIME ENERGY SAVINGS" statement should be assumed to have this footnote.

<sup>37</sup> These photos are taken manually with an iPhone 8 camera, so the resolution is not as good as for the images provided by the packaging vendor that were used in the survey (see Appendices H and I). However, the packaging appearance and text is qualitatively the same.



34. Starting from the high resolution images of the 60 watt equivalent and 100 watt equivalent packaging used in the production of the actual packages,<sup>38</sup> the 4 images (front, two sides and back) for each of the 60 watt equivalent and 100 watt equivalent packages shown as the “Test 1” images in Appendix H were created.<sup>39</sup> A copy of these “Test 1” images for the 60 watt equivalent LED light bulb package is pasted below.

<sup>38</sup> See Declaration of Phil Primato, February 14, 2020 and Appendix I.

<sup>39</sup> Each set of 4 images (of a single package) in Appendix H is at least a 3MB file. For this reason, these images are in Appendix H rather than incorporated into the main body of this report.



DUFF &amp; PHELPS

## EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRILONGER LIFE  
22+ YEARS\*100% SATISFACTION  
GUARANTEESHATTER  
PROOFCREE SOFT WHITE 2700K  
**60W**  
REPLACEMENT  
LED  
USES 10W  
2 BULBS  
MULTI-PACKGOOD FOR  
ENCLOSED  
Brightness  
**815**  
lumensEstimated  
Energy Cost  
**\$1.20**  
per yearTITLE  
CA20  
COMPLIANT

## OUR PROMISE

We believe you deserve exceptional lighting in your home.

Our LED bulbs work better and last longer. But if we don't live up to your expectations for any reason, let us know and we'll make it right.

It's that simple.

100% SATISFACTION GUARANTEE:  
This product is guaranteed to give 100% performance satisfaction subject to the Cree limited warranty, the complete terms of which can be found at [creebulb.com/warranty](http://creebulb.com/warranty). If within 10 years from the date of purchase you are not completely satisfied with the performance of this product, please contact Cree for replacement instructions.

Call 1-866-924-3645

Email [bulbs@cree.com](mailto:bulbs@cree.com)Online form at [creebulb.com/warranty](http://creebulb.com/warranty)BETTER LIGHT  
IS WORTH IT

Beautiful high CRI light delivers exceptional color quality—making the colors in your home appear vibrant, rich &amp; natural.

Text CREE to 31996  
for a short video on the difference  
exceptional light will make in your home

This is a one-time message. No additional messages will be sent. Message &amp; data rates may apply.

CREE 

## EXPERIENCE EXCEPTIONAL

90+ RICH, VIBRANT &  
CRI LIGHT NATURAL COLORS22+ LONGER LIFE  
YEARS\* 25,000 hour rated life exceeds  
ENERGY STAR® minimum requirements GOOD FOR ENCLOSED USEDIMMABLE  
Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

100% SATISFACTION GUARANTEE



SHATTERPROOF

82% LESS ENERGY  
CONSUMPTION\* \$226 LIFETIME  
ENERGY SAVINGS\*CAUTIONS & WARNINGS: Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information.

120 V - /60 Hz /90 mA

† At \$0.11 per kWh when compared to 60W incandescent.  
25,000 hour lifetime.

Lighting Facts Per Bulb	
Brightness	815 lumens
Estimated Yearly Energy Cost	\$1.20
Based on 3 hrs/day, 11¢/kWh	
Cost depends on rates and use	
Life	22.8 years
Based on 3 hrs/day	
Light Appearance	
Warm ————— Cool	
2700 K	
Energy Used	10 watts

\*Based on 3 hours per day, 25,000 hour rated lifetime.

35. The remaining 60 and 100 watt equivalent images (see Appendix H) were created in accordance with the test-and-control design I created, shown in Table 1.

**Table 1: Test and Control Image Statements**

	Test 1	Test 2	Test 3	Test 4	Control
82% LESS ENERGY CONSUMPTION*	✓	✓	✓	✓	
Our LED bulbs work better and last longer; LONGER LIFE <sup>40</sup>	✓	✓	✓		
100% SATISFACTION GUARANTEE <sup>41</sup>	✓	✓			
\$226 LIFETIME ENERGY SAVINGS*	✓				

\* At \$0.11 per kWh when compared to [60W or 100W, as appropriate] incandescent. 25,000 hour lifetime.

36. Each qualified respondent was instructed “If you don’t know any answer to any question or if you are unsure, please select the response ‘Not sure or Don’t know’. Please do not guess.” Respondents were also instructed to wear their glasses or contact lenses, if they normally do so when viewing a screen, and not to look up any information on the internet.

37. Next, each qualified respondent was randomly assigned to one of the five groups: Test 1, Test 2, Test 3, Test 4, Control. They were informed, “We would like to ask your opinion about one or two LED light bulb products you might see if you were shopping at Home Depot. You will view images of a product’s package, then you will be asked some questions about that product.” To reasonably approximate the relevant marketplace context, in addition to using images of an actual package (modified as necessary for the experimental design), respondents were instructed to “look at the product’s package as you normally would if you were considering purchasing it. Take as much time as you like to look at the images, and scroll if necessary to see

<sup>40</sup> In the cells without a ✓, “LONGER LIFE” on the front and back panels is replaced by “LIFE.”

<sup>41</sup> In the cells without a ✓, “100% SATISFACTION GUARANTEE” is deleted from the front and back panels, and on the side panel is replaced by “OUR SATISFACTION GUARANTEE.”

everything on the page.” They were requested to “try to answer all questions to the best of your ability. We are interested in your opinions. There are no right or wrong answers and we will not try to sell you anything based on your answers.” If they were qualified to see both 60 and 100 watt equivalent products, these blocks of questions were shown in randomized order (60 watt equivalent image screen, Q14, Q15) or (100 watt equivalent image screen, Q16, Q17) first and the other block of 3 screens second, with an introductory screen in between to refer to the second LED light bulb product and to remind them to “Again, please look at the product’s package as you normally would if you were considering purchasing it. Take as much time as you like to look at the images, and scroll if necessary to see everything on the page.”

38. Each respondent was then shown an image page appropriate for their group (Test 1, Test 2, Test 3, Test 4, Control) for a product type (60 or 100 watt equivalent) for which they qualified. Each such image page had 4 thumbnail images, one each of the front, both sides and the back of the package. Respondents were required to spend at least 15 seconds on this page and to click on each thumbnail image on the page to enlarge it, before they could proceed to the next screen.<sup>42</sup> They were also able to click/tap to zoom in further and look at any part of any or all of the images they wanted to examine in that zoomed-in mode.

39. After viewing all 4 images expanded, and spending a total of at least 15 seconds on the image screen, respondents were asked whether they were able to view the images clearly (Q14 for 60 watt equivalent, Q16 for 100 watt equivalent). This was a quality control check. Only 9 respondents (0.4%) of the 2,061 who answered Q14 or Q16 were terminated at this point in the survey because they were unable to view the images clearly.

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<sup>42</sup> While the button to move to the next screen was inactive, the survey displayed text that this button would appear “after you view all the images on this page, for a total of at least 15 seconds.”

40. Respondents were then told to assume it was the next time they were shopping for the corresponding wattage equivalent LED light bulbs, either in a store or online, and they saw this product at a price of:

- For the 2-pack of 60 watt equivalent bulbs (Q15): \$8.10 (\$4.05 per bulb)
- For the 100 watt equivalent bulb (Q17): \$8.78.

41. My understanding is that Cree does not set the retail price of its LED light bulbs sold by Home Depot, but rather “the retail price at which Cree’s consumer bulbs are offered to consumers is dictated by THD, not Cree.”<sup>43</sup> For this reason and to use a realistic Cree price for a consumer’s next purchase of an LED light bulb from Home Depot, I selected the above prices, which were the (undiscounted, i.e., not on sale) prices for these products shown on the Home Depot web site on January 9, 2020, as depicted in the images below.<sup>44</sup>

**Cree**

60W Equivalent Soft White (2700K) A19 Dimmable Exceptional Light Quality LED Light Bulb (2-Pack)

★★★★★ (239) [Write a Review](#) [Questions & Answers \(9\)](#)

- Designed to last 22 years and provide exceptional color quality
- 815 Lumen output, ideal for floor/table lamps, sconces and more
- 60-Watt equivalent and uses 83% less energy than standard bulbs

Includes 2 bulbs (\$3.74 /bulb)

**\$7.48** ~~\$8.10~~  
Save 8%

<sup>43</sup> Declaration of Phil Primato dated March 22, 2019, para. 14.

<sup>44</sup> See <https://www.homedepot.com/p/Cree-60W-Equivalent-Soft-White-2700K-A19-Dimmable-Exceptional-Light-Quality-LED-Light-Bulb-2-Pack-TA19-08027MDFH25-12DE26-1-12/303880968> and <https://www.homedepot.com/p/Cree-100-Watt-Equivalent-A19-Dimmable-Exceptional-Light-Quality-LED-Light-Bulb-Daylight-5000K-TA19-16050MDFH25-12DE26-1-11/311407015>, first accessed on January 9, 2020, last accessed on January 29, 2020.



**Cree**

100W Equivalent Daylight (5000K) A21 Dimmable Exceptional Light Quality LED Light Bulb

★★★★★ (493) [Write a Review](#) [Questions & Answers \(9\)](#)

- Designed to last 22 years and provide exceptional color quality
- 1600 Lumen output, ideal for floor/table lamps, sconces and more
- 100-Watt equivalent and uses less energy than standard bulbs

**\$878**  
(limit 6 per order)

42. Respondents were then asked, “Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means “Extremely Unlikely” and 10 means “Extremely Likely”.<sup>45</sup> Respondents were offered a “Not sure or don’t know” option.<sup>46</sup> As shown in Exhibits D.3 and D.4, only 47 respondents (about 3% of 1,788) answered don’t know to the 60 watt equivalent purchase likelihood question and only 44 respondents (about 3% of 1,306) answered don’t know to the 100 watt equivalent purchase likelihood question. The 4 thumbnail images of the package version the respondent had seen previously were included on the purchase likelihood question screen. Respondents were allowed to view these images again (with the same expand and zoom functionality as on the image page) by clicking on them, per guidance on the screen “To view the images again, click on the thumbnails.”

<sup>45</sup> “In marketing research, the vast majority of ratings scales have between 2 and 15 scale categories, with the most common being 5 or 7. The incremental information gained from each additional scale category above 10 or 11 is minimal, as the graph in Figure 10-2 illustrates. ... The graph shows that as the number of scale categories increased, the amount of information (both theoretical and actual) increased also, but at a decreasing rate.” Peterson (1988), p. 262 and 264. (Figure 10-2 of this textbook depicts an experimental result, with information content increasing from approximately 2.25 for a 5-point scale to approximately 2.75 for a 10-point scale.) In my experience, while academics might often use scales of 5 to 7 for psychometric studies, corporate market researchers prefer the additional information garnered from a 10-point scale for questions about the attractiveness of a product offering.

<sup>46</sup> I selected an even-numbered scale with a “not sure or don’t know” option for two reasons. First, because of the specific measurement objective and the test-and-control design for this question, it is not important to have a single scale point representing “neutral.” Second, if the rating scale has a mid-point, that mid-point will sometimes be chosen when the respondent has no opinion/is unsure of their answer and will at other times be chosen to indicate an opinion near the middle of the scale. A 10 point scale with a “not sure or don’t know” option helps to differentiate between these two situations, as a respondent who has no opinion or is unsure can select the “not sure or don’t know” option and a respondent with an opinion near the middle of the scale can select a response of 5 or 6.

43. In my experience, this type of ratings question is commonly asked in ordinary course of business surveys, to measure the appeal of a product. I have seen corporate market researchers use it numerous times. I myself have used this question or something similar to it in dozens of studies for ordinary course of business, to assist clients with multi-million dollar product development, marketing, advertising and product launch decisions.

44. The final substantive question in the survey was about the respondent's expectation for how long the LED light bulb shown in the 60 watt equivalent package appropriate for their group would last, if it were in use in their home. This question was only asked of those qualified for the 60 watt equivalent bulb context. I considered including a "don't know" option for this question as well. However, unlike for a question about their own purchase likelihood (which most respondents should feel qualified to answer, especially in a category for which they had purchased in the past), some respondents might consider this question to be one requiring expertise on the topic or past experience with Cree bulbs, and therefore would choose not to answer.<sup>47</sup> However, in this case we wished to measure the perceptions of all consumers, not just those with the most expertise – because the objective was to test the impact of certain statements on the package on consumers' expectations of the life length in the context of use in their own home, even for consumers who do not consider themselves to have expertise in LED light bulb life length. For this reason, there is no "don't know" response for this question.

45. The 4 thumbnail images of the 60 watt equivalent package version the respondent had seen previously were included again on the life length expectation question screen, with the

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<sup>47</sup> "Recent research on the effects of including a 'don't know' option shows that [including a 'don't know' option] may discourage a respondent who would be able to provide a meaningful answer from expressing it. The 'don't know' option provides a cue that it is acceptable to avoid the work of providing a more substantive response." Diamond (2011), p. 391.

same expand and zoom functionality as before, and with guidance on the screen “To view the images again, click on the thumbnails.”

46. Appendix C contains the survey questionnaire, with the specific wording of each of the questions described above. Appendix F contains a sample survey invitation. Appendix G contains screenshots from the survey. Appendix H contains the 60 and 100 watt test and control images used in the survey (a total of 40 images).

47. Prior to launching the survey, I pre-tested the questions with a few people in my office who were decisionmakers for the past purchase of an LED light bulb for their home. The pre-test respondents indicated that the questions were clear and easy to understand. No changes were made to the questionnaire as a result of this testing.

## **4.2 Survey fieldwork and quality control**

48. To provide recruitment and interviewing services, I contracted with Dynata, a global provider of sampling and market research services to nearly 6,000 clients.<sup>48</sup> Dynata completed surveys with over 100 million respondents in 2018.<sup>49</sup> Respondents are recruited by invitation only to Dynata’s panels from thousands of sources, with multiple quality controls and checks in place including digital fingerprinting.<sup>50</sup> I have worked with Dynata (including predecessor organizations Western Wats and Survey Sampling, Inc.) on numerous prior engagements spanning more than a decade.

49. Dynata programmed the survey questionnaire that I wrote, which was tested by Dynata, by me and by my staff. Dynata also invited participants from panels of U.S. consumers,

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<sup>48</sup> See <https://www.dynata.com/company/about-us/> and Dynata (2019) p. 2.

<sup>49</sup> Dynata (2019) p. 3.

<sup>50</sup> Dynata (2019), pp. 5-7.

performed a “soft launch” to test that the survey and its data collection was working properly, collected the survey responses, appended the panelists’ age and gender to the survey data file for validation purposes, and appended the panelists’ state and region.

50. From the panels to which they have access,<sup>51</sup> Dynata invited a representative sample of the U.S. population (based on age, gender, ethnicity, income, and region of the country) to participate in the study. Reminder emails were sent, in order to encourage the invitees to complete the interview. Potential participants were directed to the survey via a link in the email invitation and then screened using the qualification criteria described above. There was a small incentive provided for completing the survey, as is typical for consumer surveys of this nature.<sup>52</sup>

51. As is typical for market research of this nature, the survey was conducted double-blind, that is, participants were not told the name of the survey sponsor and participant names are not reported with the data. Furthermore, neither Dynata nor the survey participants knew how the results would be used.

52. The survey was conducted during the period January 24-February 2, 2020. Exhibit D.1 in Appendix D contains a disposition of the sample.

53. Several quality control procedures were undertaken, to test for any respondents with unreliable data. First, only respondents whose survey answers on the age and gender questions matched their panel data on date of birth and gender (if specified as male or female)<sup>53</sup> were allowed to take the interview. Also, the survey contained a standard CAPTCHA question

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<sup>51</sup> Dynata uses email address and digital fingerprinting to prevent duplication of respondents across panels. Dynata (2018) “Panel Quality: Our Values; Answers to ESOMAR’s 28 Questions,” pp. 6, 15.

<sup>52</sup> The study incentive was a certain number of “points”, with a value ranging from about \$3.18 to \$6.37.

<sup>53</sup> For the gender question, respondents were allowed to continue with the survey if their panel or survey data indicated “non-binary” or “prefer not to state.” According to Dynata, norms for the gender question have been evolving over time; this policy is among the variations considered current best practices.

(Q3), which is especially designed to screen out bots, leaving only human respondents to complete the survey.

54. The survey also contained a number of quality control questions as well as traps designed to catch respondents attempting to provide untruthful answers in order to qualify, failing to pay attention, etc.

- The list of brands (Q7) contained a red herring – the brand Arsdén does not exist for LED light bulbs. All respondents who selected this fictitious brand as a brand of LED light bulbs they had purchased in the past were terminated at this point in the interview.
- To catch those speeding thoughtlessly through the interview, Q11 asked respondents to select “very likely” from a list, to indicate their likelihood to pay attention while taking the survey.
- After presentation of the image screen, respondents were asked if they were able to view the images clearly (Q14 and Q16). If not they were terminated.<sup>54</sup> Only 9 respondents (0.4%) of the 2,061 who answered Q14 or Q16 were not able to view the images clearly.
- The final survey question (Q18) asked the respondent to indicate what type of products they were shown images of and asked to rate. If they couldn’t pick “LED light bulb” out of the list, they were terminated.

55. As shown in Exhibit D.1, 18.5% of those participating in the survey failed one of the above quality control measures (matching panel data on age and gender, CAPTCHA, red

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<sup>54</sup> Since the inability to see the images might not have been the respondent’s fault, Dynata did pay the incentive to these respondents. However, they did not continue with the survey and are not considered “completed” interviews.

herring, image clarity and attention check questions) and were screened out. In my experience with web surveys, a proportion of 18.5% failing quality control measures is not unusually high. Also, approximately 1.6% of the participants in the survey dropped out after answering the first question and before being screened out or completing the survey.

56. We also checked for speeding (completing the survey in less than 1/3 of the median time, where in this case the “median time” was computed separately for respondents who saw both products vs. respondents who saw only one product).<sup>55</sup> There were no speeders among the completed interviews who had passed the other quality control measures.

57. Exhibit D.2 compares the distribution of those responding to the invitation (the “Survey Entrants”) on age, gender and region to the data from the U.S. Census for adults age 18 and over. In my opinion, the results of the completed interviews can be expected to be reasonably representative of adult U.S. purchase decision-makers who would consider purchasing 60 or 100 watt equivalent LED light bulbs at Home Depot.

58. I also considered the issue of non-response bias.<sup>56</sup> Based on my experience, the specific questions for this survey, the length of time in the field, and the reminder emails sent to panel invitees, it is my opinion that there is not a high potential for significant non-response bias for this survey.

59. Appendix E contains the survey results for the 2,002 completed surveys, as well as results by age (Q1), gender (Q2), group, and California vs. not California.<sup>57</sup> Appendix E

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<sup>55</sup> See Exhibit D.1 for the minimum and median time for the completed interviews.

<sup>56</sup> Non-response bias is the bias that results when survey respondents differ in meaningful ways from those who are invited to the survey but do not respond to the invitation.

<sup>57</sup> Two respondents did not have panel data on state (or District of Columbia, armed forces or territory). These respondents were in the Midwest and South regions and so are included in the “not California” category.

provides standard errors for the results of the ratings and life length expectation questions, for all respondents and for these subgroups.

60. Appendix E also provides the results of a statistical analysis as to which differences between columns in a grouping (age, gender, group, California vs. not California) are statistically significant at the 95% confidence level. A capital letter below a result indicates the result is statistically significantly higher than the result for the column labeled by that letter. For example, in Table 5 of Appendix E, female respondents (in column H) are statistically significantly more likely than male respondents (in Column G) to be a past purchaser of dog food, flatbread such as pita or naan, and blue jeans in the last 12 months. The statistical significance of these differences is indicated by the capital G beneath the corresponding results in column H.

61. Appendix J provides the raw data from the survey.

#### **4.3 Survey results**

62. Exhibit D.3 presents the mean purchase likelihood ratings for 60 watt equivalent LED light bulbs (Q15) for each of the 5 groups (Test 1, Test 2, Test 3, Test 4 and Control). Exhibit D.3 also provides the 95% confidence intervals<sup>58</sup> around these mean purchase likelihood ratings, along with the results of statistical significance testing.<sup>59</sup>

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<sup>58</sup> A 95% confidence interval, which is the confidence interval most commonly used, indicates that in roughly 95 times out of 100 random samples from the population, the confidence intervals would include the population value. See Kaye and Freedman (2011), Reference Guide on Statistics in *Reference Manual on Scientific Evidence*, p. 247.

<sup>59</sup> To be statistically significant at the 95% level of confidence, the P-value (shown in exhibits D.3 to D.6) must be less than .05. A P-value less than .05 means the likelihood that the difference in two results is just due to random variation is less than 5%, i.e., there is at least a 19 out of 20 chance that there truly is a difference between the results.

63. As shown in Exhibit D.3, the mean purchase likelihood rating for the 60 watt equivalent LED light bulb for each of the Test and Control groups all round to 7.1 out of 10.<sup>60</sup> There are no statistically significant differences between any of the Test groups (Test 1, Test 2, Test 3 or Test 4) and the Control group, at the 95% level of confidence. That is, the results of the survey show that the mean purchase likelihoods for a Cree 60 watt equivalent LED light bulb with all or a subset of the Tested Statements on the package are not statistically significantly different than the mean purchase likelihood for the Control image of that same product with none of the Tested Statements on the package. Put another way, the survey results indicate that the presence of all or a subset of the Tested Statements on the package does not increase the purchase likelihood as compared to a package that contains none of these statements.

64. The results of the survey also show that adding or removing any one of the Tested Statements does not statistically significantly affect the mean purchase likelihood for a Cree 60 watt equivalent LED light bulb. More specifically, as shown in Exhibit D.3:

- Comparing the mean purchase likelihood of 7.1 for the Test 4 package (with the statement 82% LESS ENERGY CONSUMPTION) to that of 7.1 for the Control package (without that statement), this packaging statement has no statistically significant impact on purchase likelihood.
- Comparing the mean purchase likelihood of 7.1 for the Test 3 package (with the statement “Our LED bulbs work better and last longer” and the words “LONGER LIFE” adjacent to 22+ YEARS) to that of 7.1 for the Test 4 package (without the statement “Our LED bulbs work better and last longer,” replacing “LONGER

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<sup>60</sup> As explained earlier in this report, the purchase likelihood questions were framed on a scale from 1 to 10 where 1 meant “Extremely Unlikely” and 10 means “Extremely Likely.”



LIFE” with “LIFE,” and controlling for the presence of one other Tested Statement),<sup>61</sup> the packaging statement “Our LED bulbs work better and last longer” plus the word “LONGER” has no statistically significant impact on purchase likelihood.

- Comparing the mean purchase likelihood of 7.1 for the Test 2 package (with the statement 100% SATISFACTION GUARANTEE) to that of 7.1 for the Test 3 package (without that statement and controlling for the presence of two other Tested Statements), this packaging statement has no statistically significant impact on purchase likelihood.
- Comparing the mean purchase likelihood of 7.1 out of 10 for the Test 1 package (with the statement \$226 LIFETIME ENERGY SAVINGS) to that of 7.1 for the Test 2 package (without that statement and controlling for the presence of three other Tested Statements), this packaging statement has no statistically significant impact on purchase likelihood.

65. The combination of the analyses in Exhibit D.3 demonstrates that the presence of any one of the Tested Statements, combinations of the Tested Statements, or all of the Tested Statements on a 60 watt equivalent Cree LED light bulb package has no statistically significant

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<sup>61</sup> The comparison of a Test group against the Control group is like comparing the performance of a new pharmaceutical drug to “no treatment.” The comparison of one Test group against another is like comparing the performance of a new pharmaceutical drug in combination with an existing treatment to the standalone existing treatment; the comparison controls for the impact of the existing treatment because it is administered to both groups, allowing the analyst to separate out the impact, if any, of the new drug, over and above the impact of the existing treatment. In this case, the 82% LESS ENERGY CONSUMPTION statement has already been shown to have no statistically significant impact (see preceding bullet). The additional statement “Our LED bulbs work better and last longer” and the words “LONGER LIFE” adjacent to 22+ YEARS also has no statistically significant impact, meaning that this additional statement/words have no impact and neither does the combination. A similar analysis applies to each subsequent Test Statement added to the package, as described in the next two bullets and to the Test group vs. Test group analysis for the 100 watt equivalent mean purchase likelihood ratings and for the mean expected life length.

impact on purchase likelihood. In particular, in my opinion, the following combination of Tested Statements found on a 60 watt equivalent Cree LED light bulb package for certain at-issue products<sup>62</sup> has no statistically significant impact on purchase likelihood:

- The combination of the packaging statements (i) “Our LED bulbs work better and last longer” plus the word “LONGER” and (ii) 100% SATISFACTION GUARANTEE has no statistically significant impact on purchase likelihood because (a) the Test 2 package contains both these statements and there is no statistically significant difference in mean purchase likelihood between the Test 2 group and the Control group, (b) the presence or absence of the statement 82% LESS ENERGY CONSUMPTION that is on the Test 2 package does not have a statistically significant impact on purchase likelihood and (c) when each of these two Tested Statements is added to a package, there is no statistically significant impact on purchase likelihood.

66. Exhibit D.4 presents the mean purchase likelihood ratings question for 100 watt equivalent LED light bulbs (Q17) for each of the 5 groups (Test 1, Test 2, Test 3, Test 4 and Control). Exhibit D.4 also provides the 95% confidence intervals around these mean purchase likelihood ratings, along with the results of statistical significance testing.

67. As shown in Exhibit D.4, the mean purchase likelihood rating for the 100 watt equivalent LED light bulb Test groups ranges from 6.4 to 6.8 out of 10, with the Control group mean purchase likelihood rating at 6.6. In my experience asking similar questions for ordinary course of business, such small differences on a 10-point scale are not meaningful. Moreover, none of the differences between any of the Test groups (Test 1, Test 2, Test 3 or Test 4) and the

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<sup>62</sup> See the Declaration of Phil Primato, February 14, 2020.

Control group are statistically significant, at the 95% level of confidence. That is, the results of the survey show that the mean purchase likelihoods for a Cree 100 watt equivalent LED light bulb with all or a subset of the Tested Statements on the package are not statistically significantly different than the mean purchase likelihood for the Control image of that same product with none of the Tested Statements on the package. Put another way, the survey results indicate that the presence of all or a subset of the Tested Statements on the package does not increase the purchase likelihood as compared to a package that contains none of these statements.

68. The results of the survey also show that adding or removing any one of the Tested Statements does not statistically significantly affect the mean purchase likelihood for a Cree 100 watt equivalent LED light bulb. More specifically, as shown in Exhibit D.4,

- Comparing the mean purchase likelihood of 6.8 for the Test 4 package (with the statement 82% LESS ENERGY CONSUMPTION) to that of 6.6 for the Control package (without that statement), such a small difference on a 10-point scale is not meaningful. Moreover, the difference is not statistically significant. That is, this packaging statement has no statistically significant impact on purchase likelihood. In less formal terms, mathematically these two average purchase likelihoods of 6.6 and 6.8 out of 10 are not significantly different.
- Comparing the mean purchase likelihood of 6.4 for the Test 3 package (with the statement “Our LED bulbs work better and last longer” and the words “LONGER LIFE” adjacent to 22+ YEARS) to that of 6.8 for the Test 4 package (without the statement “Our LED bulbs work better and last longer,” replacing “LONGER LIFE” with “LIFE,” and controlling for the presence of one other Tested Statement), the packaging statement “Our LED bulbs work better and last longer”

plus the word “LONGER” has no statistically significant impact on purchase likelihood.

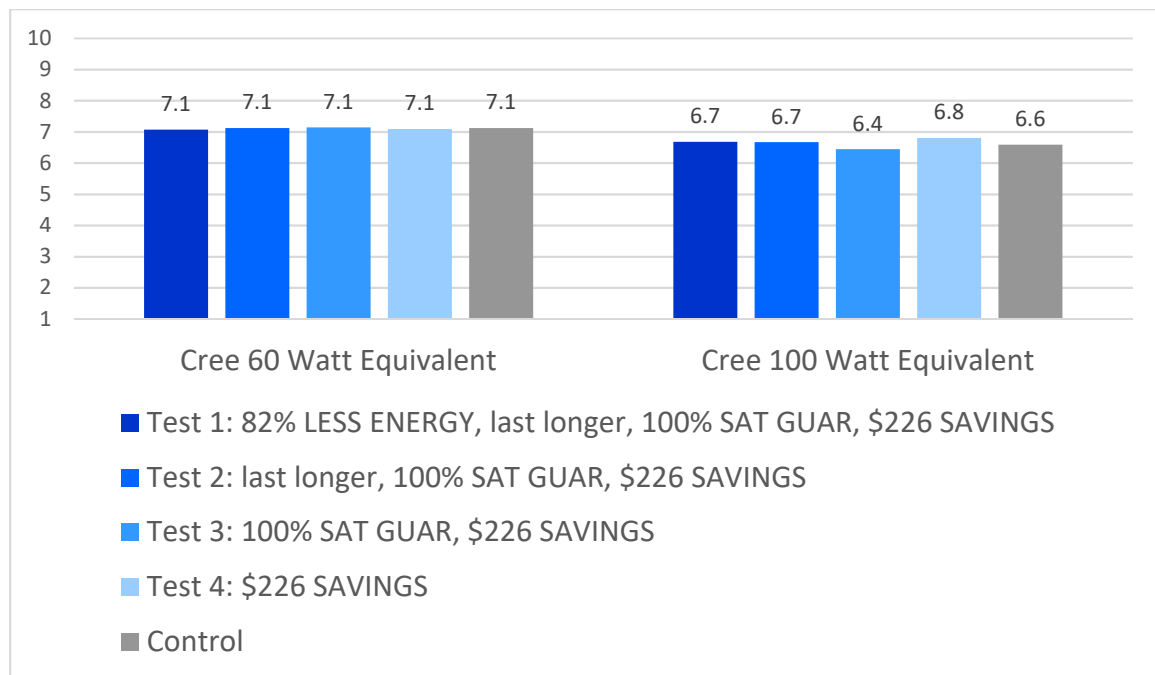
- Comparing the mean purchase likelihood of 6.7 for the Test 2 package (with the statement 100% SATISFACTION GUARANTEE) to that of 6.4 for the Test 3 package (without that statement and controlling for the presence of two other Tested Statements), such a small difference on a 10-point scale is not meaningful. Moreover, the difference is not statistically significant. That is, this packaging statement has no statistically significant impact on purchase likelihood. In less formal terms, mathematically these two average purchase likelihoods of 6.4 and 6.7 out of 10 are not significantly different.
- Comparing the mean purchase likelihood of 6.7 out of 10 for the Test 1 package (with the statement \$226 LIFETIME ENERGY SAVINGS) to that of 6.7 for the Test 2 package (without that statement and controlling for the presence of three other Tested Statements), this packaging statement has no statistically significant impact on purchase likelihood.

69. The combination of the analyses in Exhibit D.4 demonstrates that the presence of any one of the Tested Statements, combinations of the Tested Statements, or all of the Tested Statements on a 100 watt equivalent Cree LED light bulb package has no statistically significant impact on purchase likelihood. In particular, in my opinion, the following combinations of Tested Statements found on a 100 watt equivalent Cree LED light bulb package for certain at-issue products<sup>63</sup> have no statistically significant impact on purchase likelihood:

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<sup>63</sup> See the Declaration of Phil Primato, February 14, 2020.

- The combination of the packaging statements 82% LESS ENERGY CONSUMPTION and \$226 LIFETIME ENERGY SAVINGS has no statistically significant impact on purchase likelihood because (a) the Test 1 package contains both these statements and there is no statistically significant difference in mean purchase likelihood between the Test 1 group and the Control group and (b) when each of those Tested Statements is added to a package, there is no statistically significant impact on purchase likelihood.
  - The combination of the packaging statements (i) “Our LED bulbs work better and last longer” plus the word “LONGER” and (ii) 100% SATISFACTION GUARANTEE has no statistically significant impact on purchase likelihood because (a) the Test 2 package contains both these statements and there is no statistically significant difference in mean purchase likelihood between the Test 2 group and the Control group, (b) the presence or absence of the statement 82% LESS ENERGY CONSUMPTION that is also on the Test 2 package does not have a statistically significant impact on purchase likelihood and (c) when each of these two Tested Statements is added to a package, there is no statistically significant impact on purchase likelihood.
70. The results of Exhibits D.3 and D.4 are illustrated graphically in Figure 1.

**Figure 1: Mean Purchase Likelihoods for the Test and Control Images (scale 1-10)**

71. Exhibit D.5 presents the mean life length expectations for 60 watt equivalent LED light bulbs (Q17.5) for each of the 5 groups (Test 1, Test 2, Test 3, Test 4 and Control). Exhibit D.5 also provides the 95% confidence intervals around these mean life length expectations, along with the results of statistical significance testing.

72. As shown in Exhibit D.5, the mean life length expectation for the 60 watt equivalent LED light bulb for each of the Test groups ranges from 11.7 to 13.5 years, with the Control group mean life length expectation near the high end of the range at 13.0 years. There are no statistically significant differences between Test groups Test 2, Test 3 or Test 4 and the Control group, at the 95% level of confidence. The Test 1 group is also not statistically significantly higher in mean life length expectation than the Control group.<sup>64</sup> That is, the results

<sup>64</sup> In fact, the mean expected life length for the Test 1 group, which saw the package with all 4 Tested Statements, is actually statistically significantly *lower* (at the 95% level of confidence) than the mean expected life length for the

of the survey show that the mean life length expectation for a Cree 60 watt equivalent LED light bulb with all or a subset of the Tested Statements on the package is not statistically significantly higher than the mean life length expectation for the Control image of that same product with none of the Tested Statements on the package.

73. As shown in Exhibit D.5, the results of the survey also show that adding any one of the Tested Statements does not statistically significantly increase the mean life length expectation for a Cree 60 watt equivalent LED light bulb. More specifically,

- Comparing the mean life length expectation of 13.5 years for the Test 4 package (with the statement 82% LESS ENERGY CONSUMPTION) to that of 13.0 years for the Control package (without that statement), the perception of the Test 4 package represents less than a 4% increase<sup>65</sup> in mean expected life length. This difference is not statistically significant. That is, this packaging statement has no statistically significant impact on expected life length. In less formal terms, mathematically these two average purchase likelihoods of expected life lengths of 13.0 and 13.5 years are not significantly different. Furthermore, we know from the purchase likelihood analysis in Exhibit D.3 that any difference in expected life length between the Test 4 and Control groups does not statistically significant impact purchase likelihood.<sup>66</sup>
- Comparing the mean life length expectation of 12.6 years for the Test 3 package (with the statement “Our LED bulbs work better and last longer” and the words “LONGER LIFE” adjacent to 22+ YEARS) to that of 13.5 years for the Test 4

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Control group, which saw the package with none of the Tested Statements. This result will be discussed in more detail below,

<sup>65</sup> 0.5 years in addition to the Control group perception of 13.0 years,  $0.5/13.0 = 3.8\%$ .

<sup>66</sup> The mean purchase likelihood ratings for the Test 4 and Control groups both round to 7.1, see Exhibit D.3.

package (without the statement “Our LED bulbs work better and last longer,” replacing “LONGER LIFE” with “LIFE,” and controlling for the presence of one other Tested Statement), the packaging statement “Our LED bulbs work better and last longer” plus the word “LONGER” has no statistically significant impact on life length expectation.

- Comparing the mean life length expectation of 12.8 years for the Test 2 package (with the statement 100% SATISFACTION GUARANTEE) to that of 12.6 years for the Test 3 package (without that statement and controlling for the presence of two other Tested Statements), the perception of the Test 2 package represents less than a 2% increase<sup>67</sup> in mean expected life length. This difference is not statistically significant. That is, this packaging statement has no statistically significant impact on expected life length. In less formal terms, mathematically these two average expected life lengths of 12.6 and 12.8 years are not significantly different. Furthermore, we know from the purchase likelihood analysis in Exhibit D.3 that any difference in expected life length between the Test 2 and Test 3 groups does not statistically significant impact purchase likelihood.<sup>68</sup>
- Comparing the mean life length expectation of 11.7 years for the Test 1 package (with the statement \$226 LIFETIME ENERGY SAVINGS) to that of 12.8 years for the Test 2 package (without that statement and controlling for the presence of

<sup>67</sup> 0.2 years in addition to the Test 3 group mean expectation of 12.6 years,  $0.2/12.6 = 1.6\%$ .

<sup>68</sup> The mean purchase likelihood ratings for the Test 4 and Control groups both round to 7.1, see Exhibit D.3.



three other Tested Statements), this packaging statement does not statistically significantly increase life length expectation.

74. Recall that the Test 1 group saw the package with all 4 Tested Statements, the Test 2 group saw the same package as the Test 1 group but without one Tested Statement (\$226 LIFETIME ENERGY SAVINGS), and the Control group saw the package with none of the Tested Statements. We have the following results on Exhibit D.5.

- a. The mean expected life length for the Test 1 group is *lower* than the mean expected life length for the Control group. The statistical significance is at the 95% level of confidence. The P-value is .031, which means the likelihood that the difference is just due to random variation is 3.1%, i.e. there is approximately a 97% chance that the mean expected life length for the package with all 4 Tested Statements really is lower than for the package with none of the Tested Statements.
- b. The difference in the mean life length expectation for the Test 2 package, which has all the Tested Statements except the statement \$226 LIFETIME ENERGY SAVINGS, and the Control group is not statistically significantly different (P-value of .794).
- c. The statistical test for the difference in mean life length expectation for the Test 1 package (with the statement \$226 LIFETIME ENERGY SAVINGS) as compared to the Test 2 package (without that statement but otherwise identical), while not

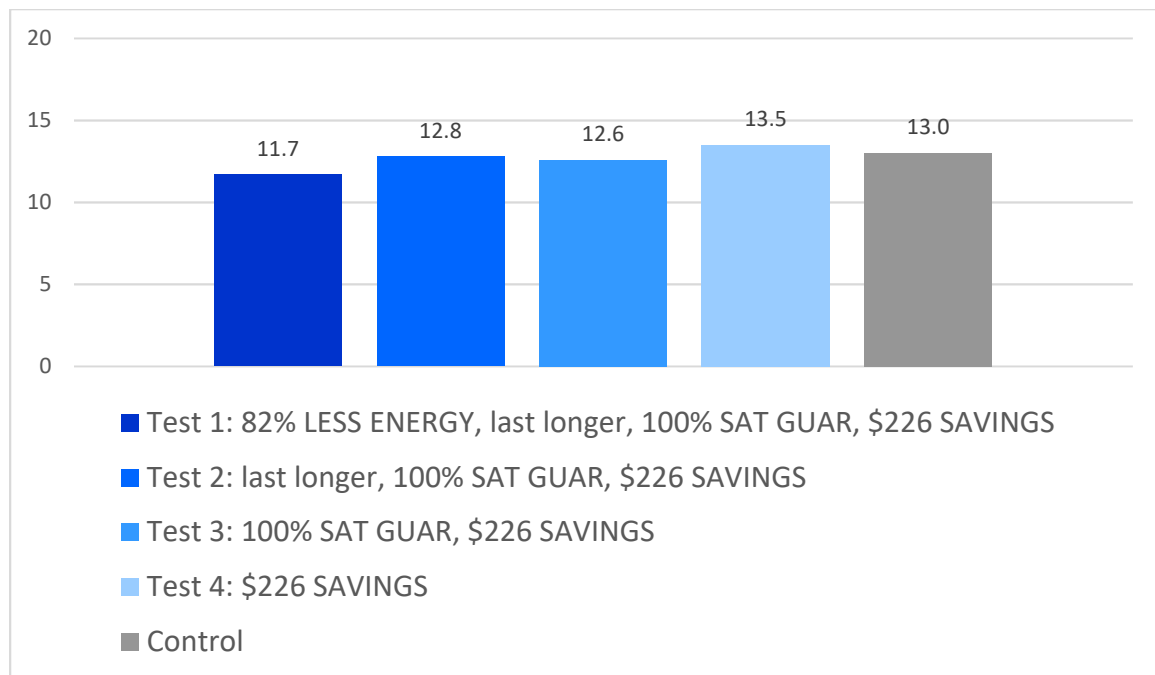
quite rising to the requisite 95% level of confidence,<sup>69</sup> does have a P-value of .058.

75. Given the above three observations about the Test 1, Test 2 and Control groups, a reasonable inference would be that the presence of the statement \$226 LIFETIME ENERGY SAVINGS on the package might tend to *reduce* the mean expected life length for the 60 watt equivalent Cree LED light bulb.

76. The results of Exhibit D.5 are illustrated graphically in Figure 2.

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<sup>69</sup> Statisticians generally rely on results that are statistically significant at the 95% level (or higher), i.e. with P-values of 5% or lower. Per Kaye and Freedman (2011), the Reference Guide on Statistics in the *Reference Manual on Scientific Evidence*, on p. 251: “In practice, statistical analysts typically use levels of 5% and 1%. [Citing to two Supreme Court cases: *Castaneda v. Partida*, 430 U.S. 482, 496 n.17 (1977) and *Hazelwood School District v. United States*, 433 U.S. 299, 311 n.17 (1977).] The 5% level is the most common in social science[.]” Significance at the 90% level of confidence is sometimes considered as weak evidence of a true difference between groups. Differences between groups with a statistical significance level below 90% are generally considered to be not statistically significant; that is, the data are consistent with the hypothesis that there are not differences between the two groups.

**Figure 2: Mean Expected Lifetime for the Test and Control Images (in years)**

77. The top table of Exhibit D.6 presents the mean and median life length expectations for 60 watt equivalent LED light bulbs (Q17.5) for each of the 5 groups (Test 1, Test 2, Test 3, Test 4 and Control) for two subgroups of respondents: those who indicated in Q7 that they had purchased Cree LED light bulbs in the past (“Cree Past Purchasers”) and those who had not indicated in Q7 that they purchased Cree LED light bulbs in the past (“Not Cree Past Purchasers”). The top table of Exhibit D.6 also provides the results of statistical significance testing on the means for these subgroups.

78. As shown in Exhibit D.6, the mean life length expectation for the 60 watt equivalent LED light bulb for Cree Past Purchasers is 13.3 years and for Not Cree Past Purchasers is 12.6 years. The medians are the same, at 10 years. Although the Cree Past Purchasers have about a 5.5% higher mean life length expectation than the Not Cree Past Purchasers, this difference is not statistically significant. That is, the results of the survey show that after purchasing Cree LED light bulbs and using them for a period of time, Cree Past

Purchasers do not, on average, have a worse perception of the life length of Cree LED light bulbs than those who haven't purchased Cree LED light bulbs. Moreover, the survey results also show that Cree Past Purchasers do not, on average, have a perception of the life length of Cree LED light bulbs consistent with the Plaintiff's allegation that Cree LED light bulbs "burned out within 6 months to a year of use."<sup>70</sup>.

79. Exhibit D.6 also provides the percentage of respondents whose mean life length expectation for the 60 watt equivalent LED light bulb is similar to the experience alleged in the small set of online reviews cited in the Complaint, i.e., less than or equal to two years.<sup>71</sup> Only 14 of the 196 Cree Past Purchasers (7.1%) expected the Cree 60 watt equivalent LED light bulb to last two years or less. In fact, the Cree Past Purchasers were only half as likely as the Not Cree Past Purchasers to expect the Cree 60 watt equivalent LED light bulb to last two years or less. This result is statistically significant at the 99% level of confidence (the P-value is .003, which means the likelihood that the difference in these two percentages is just due to random variation is 0.3%, i.e. there is a 99.7% chance that Cree Past Purchasers are less likely to expect a Cree 60 watt equivalent LED light bulb to last two years or less than Not Cree Past Purchasers).

80. As shown in Exhibit D.7, on average, Cree 60 and 100 watt equivalent consumer LED light bulbs purchased on or prior to the mid-point day of the survey were purchased almost 4 years prior to the mid-point day of the survey.<sup>72</sup> Moreover, most such Cree bulbs (84.2%)

<sup>70</sup> Plaintiff's Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, pp. 9-10.

<sup>71</sup> As previously explained, para. 35 of the Complaint purports to include "a small sample [6] of customer complaints made on the Internet" with comments about Cree LED (light emitting diode) light bulbs failing within a period of months to a little over two years. This so-called "sample" is not a random sample nor is it the result of a comprehensive analysis of all the online reviews in a sizeable, relevant time period. It does not represent the results of a reliable statistical analysis and it is not extrapolatable to purchasers of Cree LED light bulbs in general.

<sup>72</sup> The Exhibit D.7 analysis is conservative. First, although sales began in March 2019, the analysis assumes 2013 unit sales were uniformly distributed from April to December 2013. Second, my understanding is that unit sales in 2019 (and, on a prorated basis, in 2020) were less than in 2018. However, the analysis assumes unit sales in 2019 equal unit sales in 2018 and partial year 2020 unit sales occur at the same rate as in 2018. Since 2019 and 2020 are

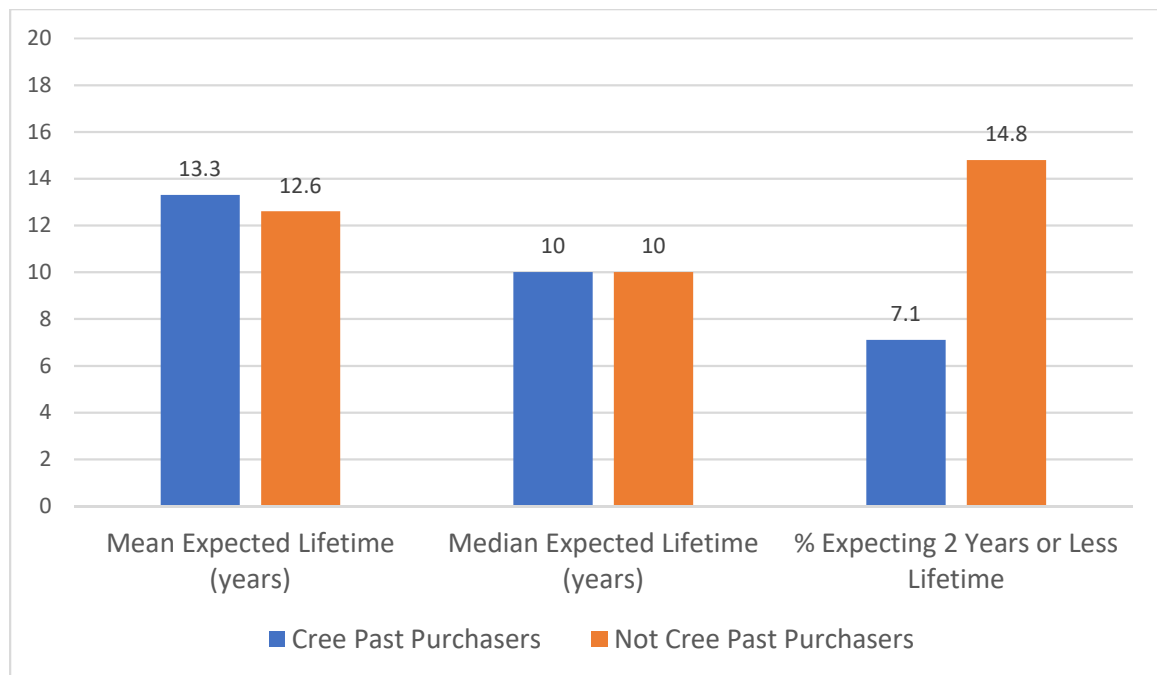
were purchased 2 or more years prior to the mid-point date of the survey. Since in my opinion the survey respondents are representative of adult U.S. purchase decision-makers who would consider purchasing 60 or 100 watt equivalent LED light bulbs at Home Depot, and as explained above the vast majority of Cree consumer LED light bulbs have been sold through Home Depot, the results on time elapsed since purchase in Exhibit D.7 should also apply to most of the Cree Past Purchaser survey respondents.<sup>73</sup> That is, only about 7% of the Cree Past Purchasers expected the Cree 60 watt equivalent LED light bulb to last two years or less, even though most (about 84%) of the Cree Past Purchasers would have purchased Cree LED light bulbs two or more years ago.

81. The results of Exhibit D.6 are illustrated graphically in Figure 3.

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closer in time to the date of the survey, increasing the unit sales in those years reduces the average (and the distribution of) time since purchase.

<sup>73</sup> In fact, the Exhibit D.7 results are conservative when applied to Cree Past Purchasers. If any Cree Past Purchasers purchased Cree LED light bulbs on more than one occasion, the first such purchase would represent the longest length of time since purchase for them. That is, the length of time since the first purchase is greater than the average length of time since purchase, for anyone who purchased on more than one occasion. Since the calculations in Exhibit D.7 use the average length of time, and presumably some Cree Past Purchasers have purchased Cree LED light bulbs on more than one occasion, those Exhibit D.7 calculations are conservative.

**Figure 3: Expected Lifetime for Past Cree Purchasers and Not Past Cree Purchasers**

82. As shown in Appendix E, the mean purchase likelihood ratings by group for the 60 watt equivalent LED light bulb, the mean purchase likelihood ratings by group for the 100 watt equivalent LED light bulb, and the mean life length expectations by group are not statistically significantly different for California vs. not California LED light bulb purchase decisionmakers.

## V. SUMMARY AND CONCLUSIONS

83. I designed and oversaw the conducting of an internet panel survey to interview a representative sample of adult U.S. purchase decision-makers who would consider purchasing 60 watt equivalent or 100 watt equivalent LED light bulbs at Home Depot. I reviewed court filings, documents produced, declarations and depositions in this matter, researched prices online, reviewed portions of the Home Depot and Amazon websites devoted to LED light bulbs, went to a Home Depot store and purchased Cree LED light bulbs there, and interviewed the former Vice

President and General Manager for Cree's consumer LED bulbs business, to support the design of my survey. In this section I summarize some of my opinions from my analysis.

84. In my opinion, the results of the survey demonstrate that the presence of any one of the following statements, or a combination of or all of the following statements, on a package of Cree LED 60 or 100 watt equivalent light bulbs does not result in a statistically significant increase in the average purchase likelihood for those LED light bulbs:

- 82% LESS ENERGY CONSUMPTION
- Our LED bulbs work better and last longer; LONGER LIFE (instead of merely "LIFE")
- 100% SATISFACTION GUARANTEE
- \$226 LIFETIME ENERGY SAVINGS.

85. I was also asked to measure whether or not the presence on the package of these statements is likely to impact consumers' expectations of the life length of Cree LED light bulbs. In my opinion, the results of the survey demonstrate that the presence of one, a combination, or all, of the above statements on a package of Cree LED 60 watt equivalent light bulbs does not result in a statistically significant increase in consumers' expectations of the life length for those LED light bulbs.

86. The results of the survey also demonstrate that after purchasing Cree LED light bulbs and using them for a period of time, Cree Past Purchasers do not, on average, have a worse perception of the life length of Cree 60 watt equivalent LED light bulbs than those who haven't purchased Cree LED light bulbs.

87. Moreover, the survey results also show that Cree Past Purchasers do not, on average, have a perception of the life length of Cree LED light bulbs consistent with the

Plaintiff's allegations regarding his personal experience or with the experience alleged in the small, non-representative set of online reviews cited in the Complaint. The average life length expected by Cree Past Purchasers is 13.3 years, slightly higher (though not significantly so) than for Not Cree Past Purchasers. The median life length expected by Cree Past Purchasers is 10 years, the same as for Not Cree Past Purchasers.

88. Only a small percentage of Cree Past Purchasers (7.1%) expected the Cree 60 watt equivalent LED light bulb to last two years or less, even though on average they would have purchased a Cree bulb almost 4 years prior and most (about 84%) would have purchased Cree Led light bulbs two or more years prior. Cree Past Purchasers were only half as likely as the Not Cree Past Purchasers to expect the Cree 60 watt equivalent LED light bulb to last two years or less.


89. In my opinion, the results of the purchase likelihood and life length expectation questions can be expected to be reasonably representative of U.S. adult LED light bulb purchase decision-makers who would consider purchasing 60 or 100 watt equivalent LED light bulbs at Home Depot. Moreover, the mean purchase likelihood ratings by group and the mean life length expectations by group were not statistically significantly different for California (as compared to not California) LED light bulb purchase decisionmakers.



DUFF & PHELPS

90. I declare to the best of my knowledge, information, and belief, under penalty of perjury of the laws of the United States, that the statements and information included herein are true and correct.

Date: February 14, 2020

A handwritten signature in black ink, reading "Lynne Weber". The signature is written in a cursive, flowing style.

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Lynne Weber, Ph.D.  
Managing Director  
Duff & Phelps, LLC

**Appendix A: Documents and Information**

- Court documents in this matter:
  - Amended Class Action Complaint in the matter of *Jeff Young, individually and on behalf of all other similarly situated v. Cree Inc.*, Case 4:17-cv-06252-YGR (Northern District of California, San Francisco Division), dated April 30, 2018
  - Declaration of Phil Primato in Support of Opposition to Plaintiff's Motion for Class Certification, dated March 22, 2019
  - Declaration of Phil Primato in Support of Renewed Opposition to Plaintiff's Motion for Class Certification, dated February 14, 2020
  - Declaration of Scott Schwab in Support of Opposition to Plaintiff's Motion for Class Certification, dated March 22, 2019
  - Declaration of Amy Soens in Support of Opposition to Plaintiff's Motion for Class Certification, dated March 22, 2019
  - Declaration of Jonathan Vollers in Support of Opposition to Plaintiff's Motion for Class Certification, dated March 22, 2019
  - Defendant Cree, Inc.'s Answer to Plaintiff's Amended Class Action Complaint, dated August 16, 2018
  - Depositions in this matter, with accompanying exhibits
    - Deposition of Stefan Boedeker, dated March 12, 2019
    - Deposition of Jesse David, dated April 17, 2019
    - Deposition of Phil Primato, dated April 17, 2019
    - Depositions of Scott Schwab, dated January 4, 2019 and April 16, 2019
    - Deposition of Joel Steckel, dated April 23, 2019
  - Opposition to Plaintiff's Motion for Class Certification, dated March 22, 2019
  - Order on Motion to Dismiss, dated April 9, 2018
  - Order on Motion to Dismiss, dated August 2, 2018
  - Order Denying Motion for Class Certification & Denying as Moot Motions to Strike and Exclude, dated May 29, 2018
  - Plaintiff's Memorandum of Law in Support of Motion for Class Certification, dated January 18, 2019
  - Plaintiff's Notice of Motion and Renewed Motion for Class Certification, dated December 13, 2019
  - Plaintiff's Reply in Support of Motion for Class Certification, dated May 3, 2019
  - Reporter's Transcript of Proceedings, dated May 28, 2019.
- Boedeker, Stefan. Reports in this matter:
  - Expert Report of Stefan Boedeker in Support of Plaintiff's Motion for Class Certification, dated January 18, 2018
  - Expert Rebuttal Report of Stefan Boedeker in Support of Plaintiff's Motion for Class Certification, dated May 3, 2019.
- David, Jesse. Report in this matter and associated reference materials: Expert Report of Jesse David, Ph.D., dated March 22, 2019.
- Diamond, Shari Seidman, J.D., Ph.D. (2011). Reference Guide on Survey Research, in *Reference Manual on Scientific Evidence, Third Edition*, Federal Judicial Center 2011.
- Dynata (2019). "Panel Book," provided to Duff & Phelps by Dynata on January 27, 2020.
- Dynata (2018). "Panel Quality: Our Values; Answers to ESOMAR's 28 Questions."

- Kaye, David H. and David A. Freedman (2011). Reference Guide on Statistics in *Reference Manual on Scientific Evidence, Third Edition*, Federal Judicial Center 2011.
- *Manual for Complex Litigation, Fourth Edition*. Federal Judicial Center, 2004.  
HYTERA\_05799188
- Peterson, Robert A. (1988). *Marketing Research, Second Edition*. Business Publications, Inc.
- Steckel, Joel H. Report in this matter: Expert Rebuttal Report of Joel H. Steckel, Ph.D., dated March 22, 2019.
- Web sites as listed in the body and appendices of this report, plus generally  
[www.amazon.com](http://www.amazon.com), [www.cree.com](http://www.cree.com), [www.dynata.com](http://www.dynata.com), and [www.homedepot.com](http://www.homedepot.com).

**Appendix B: CV of Lynne J. Weber, Ph.D.**

Dr. Lynne Weber is a Managing Director in the Silicon Valley office of Duff & Phelps, LLC. She has more than 35 years of consulting experience, with expertise in market strategy analysis, market research, statistics, data analytics, econometrics, forecasting, and risk assessment. She has served as an expert regarding market research surveys, statistics, econometrics, data analytics, market analyses, pricing, and "but for" projections.

*Professional and Business Experience*

- Managing Director, Duff & Phelps (2005 – present)
- Managing Director, Standard & Poor's (2001 – 2005)
- Principal, PricewaterhouseCoopers LLP (1998 – 2001)
- Applied Decision Analysis, Inc. (1980 – 1998, since 1985 in the position of Principal)
- Summer intern, AT&T Bell Laboratories, Holmdel NJ (Summer 1976 and Summer 1977)

*Examples of Engagement Experience*

- **Strategic Value Advisory.** Has led more than 200 engagements involving analysis of marketing, pricing, product development, product design, product line, distribution channel, bundling, partnering, segmentation, advertising, warranty policy, customer satisfaction and/or business strategies, often via development of models to forecast customer response to, and/or revenues of, new and existing offerings and technologies under "What if..." scenarios.
- **Market Research.** Has led more than 200 market research studies, using online, phone, mail, email, focus group and personal interviewing methodologies, conducted in US, Canada, Europe and Asia, with consumers, B2B customers, and channels. Has conducted numerous surveys to measure demand for products & features, price sensitivity, inertia, brand value, feature value, usage of features and consumables, attitudes, behaviors, response to messaging, and perceptions. Has moderated hundreds of focus groups.
- **Statistics.** Has led statistical analyses and data analytics engagements to project the following from statistical samples and/or datasets: demand, usage, defect rates, product failure rates, warranty expenses, foreign exchange rates, commodity prices; manufacturing capacity, supply, telemarketing success, collections, unclaimed property, R&D tax credits, and going concern audit opinions.
- **Complex Commercial Litigation.** Provides expert reports and testimony in complex commercial litigation. Has served as an expert on patent, contract, false advertising, copyright, trade secret, anti-trust, trademark, and product liability disputes, regarding: projections of lost sales; econometrics; statistics; data analyses; pricing; market analyses; and surveys to measure customer choice, willingness-to-pay, switching propensity, usage, and importance of product features and brand.
- **Econometrics.** Has used government, client and third party databases, leveraging data such as historical financials, employment, consumer sentiment, exports, imports, consumer spend and/or industry-specific revenues, unit sales, prices, production, web searches, and/or analyst or economist forecasts of these variables, to forecast (or estimate in a "but for" world) sales,

prices, production, market share, losses and other financials. Has projected the impact of price and feature changes on demand, estimated the impact of alleged collusive behavior on price, and developed econometric models in more than a dozen industries.

- **Strategic Planning.** Has assisted clients with strategy valuation/selection and with implementation of best practice planning processes. Has led workshops to identify creative strategic alternatives for business growth, acquisition, divestiture, market entry, big M marketing strategy, and/or operational strategy.
- **Commercial Due Diligence.** Has assessed the achievability of projected M&A results, and the impact of deal terms, in light of market research, historical performance, comparables, competitive positioning, and market trends.
- **Business and IP Valuation.** Has developed financial projections and/or expected cash flows for evolving markets, R&D investments and patent portfolios, to support business valuations, M&A, and tax valuations.
- **Valuation of Contingent Assets & Liabilities.** Has valued contingent consideration (e.g. earn-outs and performance incentives, commonly found in M&A deals related to young/growth companies, pre-launch products and services companies) on more than 150 transactions. Has valued liabilities arising from contingencies such as guarantees, warranties, loss sharing arrangements, and indemnifications for financial reporting purposes.
- **Operations Value Advisory.** Has helped clients determine profitability by product line and allocate resources to improve manufacturing, telemarketing, prospect targeting, and service/support operations.

#### Selected Publications and Presentations

- “Valuation of Cryptoassets: The New Frontier,” American Society of Appraisers/USC Fair Value Conference, June 2019 and Duff & Phelps’ IP Value Summit, October 2019.
- VFR Valuation Advisory #4 “*Valuation of Contingent Consideration*” (co-author), The Appraisal Foundation, February 2019.
- “Cryptocurrency: Current Issues and Trends” (panelist), Duff & Phelps IP Value Summit, November 2018.
- “Hot Topics in Patent Licensing & Litigation” (panel moderator), LES MCLE, March 2018.
- “The Art and Science of IP Valuation” (with J. Lewis, et al.), LES Annual Spring Meeting, May 2017.
- American Society of Appraisers “Ask the Experts” webinar on the Valuation of Contingent Consideration (co-presenter), May 2017.
- “Valuation of Digital Assets”, MIT Computational Law Course, January 2017.
- “IP Valuation: Methods and Trends” (with J. Kloos), Duff & Phelps IP Value Summit, December 2016.
- “Brexit: A valuation focus on how best to prepare and respond” (co-author), *Financial Director*, July 2016.

- “Patent Values and Litigation: The New Normal?” (with C. Bakewell, et al.), Licensing Executives Society MCLE, Feb 2015.
- “Survey Says!” (with T. Britven), Licensing Executives Society MCLE, June 2013.
- “Lessons Learned in Valuing Contingent Consideration” (with G. Raichart), *Financial Executive*, May 2012.
- “Best Practices in Warranty Modeling from a Finance Point of View”, Warranty Chain Management Conference, March 2012.
- “The Happy Divorce” (with G. Raichart), *The Deal*, August 2011.
- “Going Concern” (with J. Palmer), *Accountancy Magazine*, Dec 2010.
- “Valuing Contingent Consideration under SFAS 141R, *Business Combinations*” (with R. Schwartz) in *Business Valuation Review* Vol 28, No. 2, 2009. Presentations on valuation of contingent assets and liabilities at American Society of Appraisers (ASA), Financial Executives International (FEI), Business Valuation Resources, and AGN Conferences in 2008-2012 and in 2018.
- “Valuing a License” (with S. Columbia), Suffolk University Law School CLE Program on Licensing: Seizing Opportunities and Mitigating Risks, 2007.
- “Winning with Better Forecasts” (with A. Cody), in *Mergers & Acquisitions Journal*, Nov 2007.
- “Forecasting without Looking in the Rearview Mirror”, INFORMS Roundtable Winter Meeting, 2006.
- “Integrating Market Research and New Product Development”, Frost & Sullivan's Advanced Marketing Research Executive Summit, 2005.
- “Optimizing the Design of Service Businesses”, Computer Market Analysis Group (CMAG) Conference, 2005.
- “Do You Partner Smart? Valuing Strategic Alternatives”, Frost & Sullivan's Healthcare Opportunities 2003 Executive Summit, 2003.
- “Forecasting the Market for New Technologies”, CMAG Conference, 2002.
- “Manufacturing Strategy in an Uncertain World” (with Genentech’s C. Rice), Proceedings IIR Conference on Strategic Planning for the Clinical and Commercial Manufacturing of Biopharmaceuticals, and Proceedings of the Bay Area BioScience Center Gene Acres Conference, 2002.

Expert Witness Reports and Testimony, last four years

- ***Hytera Communications Corp. Ltd. v. Motorola Solutions, Inc.*** Case No. 1:17-cv-01794-DCN, US District Court, Northern District of Ohio, Eastern Division, January 2020. Report
- ***Sony Music Entertainment, et al. v. Cox Communications Inc., et al.*** Case 1:18-cv-00950-LO-JFA, US District Court, Eastern District of Virginia, December 2019. Testimony at trial and in deposition, report
- ***Wi-LAN Inc., et al. v. LG Electronics, Inc., et al.*** Case No. 18-cv-01577-H-BGS, US District Court, Southern District of California, August 2019. Report

- ***Hallufix AG v. DJO, LLC and ORMED GmbH***, Arbitral Proceeding DIS-SV-SL-6100/16, Munich, November 2017. Testimony at international arbitration hearing, report
- ***VideoShare, LLC v. Google Inc. and YouTube, LLC***. Case 13-cv-990-GMS, US District Court, District of Delaware, June 2016. Deposition testimony, report
- ***MobileMedia Ideas LLC v. Apple Inc.*** Case 10-258-SLR, US District Court, District of Delaware, April 2016. Deposition testimony, report
- ***Under Armour, Inc. v. adidas AG***. Case No. IPR2015-00700 before the Patent Trial and Appeal Board, United States Patent and Trademark Office, April 2016. Deposition testimony, report
- ***Mirror Worlds Technologies, LLC v. Apple Inc., et al.*** Civil Action No. 6:13-cv-419, US District Court, Eastern District of Texas, Tyler Division, January 2016. Deposition testimony, report

Education

Ph.D. - Operations Research, Stanford University

M.S. - Statistics, Stanford University

B.A. - Math, Cornell University

Professional Affiliations

American Marketing Association, Member

American Bar Association, Associate Member

**Appendix C: Survey Questionnaire****Web Survey with U.S. LED Light Bulb Purchasers**

**Recruiting Instructions:** Outbound invites shall be sent to a nationally representative sample (on age, gender, ethnicity, income, education, etc.) of U.S. adults on your panel(s).<sup>74</sup> (No non-panel recruiting. No recruiting directly from web sources or web communities. No targeted recruiting from the panel.) If you use more than one panel, please de-dup across panels to ensure only one completed interview per respondent.

**Sample size and Soft Launch:** as discussed.

**Project Management Instructions:** Please provide

1. **Daily** recruiting status (tallies) including:
  - a. Cumulative number of survey entrants by age and gender
  - b. Terminates and incompletes, by the last question they answered
  - c. Number of completes by age and gender and by whether they have purchased Cree
2. At survey completion, please provide:
  - a. A final disposition, including number of responses to invitationss and a disposition (the number of terminations and drop-offs at each question).
  - b. De-identified raw data for all completed interviews, including survey duration (# minutes to complete)
  - c. An example survey email invitation
  - d. The amount (or range) of incentive provided to respondents
  - e. Banners and tabs (overall, by age, by gender, by Test 1/Test 2/Test 3/Test 4/Control) with statistical significance testing at the 95% level.

**General Programming Instructions:** Programming instructions are shown in **BOLD, ALL CAPS** font. Programmed insertions are set off by brackets []. Also:

- The “go to the next screen” button should appear only on the bottom of a page (not on the top and the bottom).
- No survey title will be displayed to respondents.
- Each question should be on its own page unless otherwise specified.

**Append the following data from the panel provider to the survey data:**

1. Date of birth
2. Gender
3. Region of U.S.
4. U.S. State of residence (e.g., California)

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<sup>74</sup> Outbound invites can be adjusted for differential propensity to respond of certain demographic groups, if that is your standard practice. Outbound invites can also be adjusted if inbound responses are different than anticipated.



**DETECT DEVICE RESPONDENT IS USING. IF IT'S A DESKTOP PC, LAPTOP PC, OR TABLET THAT'S FINE. IF SMARTPHONE OR OTHER (SMALLER-THAN-TABLET) MOBILE DEVICE, INSTRUCT RESPONDENT TO LOG BACK IN WITH APPROVED DEVICE WITH THE PANEL-SPECIFIC VARIANT OF THE MESSAGE: "Sorry, your device cannot be used for this survey. Please close this window and go to a desktop, laptop computer, or tablet device. Once you are at one of these devices, click on the same invitation to take this survey."**

Q1. What is your age?

- ☐ 17 or younger
- ☐ 18 to 24
- ☐ 25 to 39
- ☐ 40 to 54
- ☐ 55 to 64
- ☐ 65 or older

**IF 17 OR YOUNGER, TERMINATE & TALLY.  
VALIDATE AGE AGAINST PANEL DATA. IF AGE CATEGORY DOES NOT CONTAIN AGE, TERMINATE & TALLY.  
IF AGE IS 18+ AND AGE IS VALIDATED AGAINST THE PANEL DATA, CONTINUE.**

Q2. What is your gender?

- ☐ Male
- ☐ Female
- ☐ Non-binary
- ☐ Prefer not to state

**IF PANEL DATA IS MALE AND SELECT FEMALE IN Q2 OR IF PANEL DATA IS FEMALE AND SELECT MALE IN Q2, TERMINATE & TALLY. OTHERWISE CONTINUE. (FOR CLARITY, IF THEY SELECT NON-BINARY/OTHER OR PREFER NOT TO STATE EITHER IN THE SURVEY OR THE PANEL DATA, THEIR GENDER ANSWER IS "CORRECT.")**

**Q3. PLEASE INSERT AN IMAGE CAPTCHA QUESTION TO ENSURE RESPONDENT IS A HUMAN, NOT A BOT. TERMINATE IF FAIL.**

Q4. Which, if any, of the following types of businesses, do you or any member of your household currently work for? Please select all that apply.

- ☐ A smartphone manufacturer
- ☐ A pet food company
- ☐ A bakery or bread-making company
- ☐ A light bulb manufacturer
- ☐ A company that makes clothing
- ☐ None of the above

**IF LIGHT BULB MANUFACTURER IS SELECTED, TERMINATE AND TALLY. OTHERWISE, CONTINUE.**

Q5. Which, if any, of the following products did you personally purchase in the last 12 months? Please select all that apply.

- ☐ Android smartphone
- ☐ Dog food
- ☐ Flatbread such as pita or naan
- ☐ LED light bulb
- ☐ Blue jeans
- ☐ None of the above

**IF LED LIGHT BULB IS SELECTED, CONTINUE. OTHERWISE, TERMINATE AND TALLY.**

Q6. Please focus on your most recent purchase of an **LED light bulb for your home**. For that purchase, how involved were you personally in the decision as to which brand and type of LED light bulb to get?

- ☐ I was the primary decision-maker
- ☐ I was actively involved in the decision
- ☐ I was involved a little in the decision, but not much
- ☐ I was not at all involved in the decision
- ☐ Not sure or Don't remember
- ☐ I haven't ever bought an LED light bulb for my home

**IF PRIMARY OR ACTIVE DECISION-MAKER, CONTINUE. OTHERWISE, TERMINATE & TALLY.**

Q7. Which of the following brands of LED light bulbs have you **ever** purchased? Please select all that apply.

- ☐ Arsdén
- ☐ Cree
- ☐ Feit
- ☐ General Electric (GE)
- ☐ Philips
- ☐ Sylvania
- ☐ Other brand
- ☐ Don't remember/not sure **[EXCLUSIVE]**

**IF ARSDEN (THIS IS A RED HERRING, THERE IS NO SUCH LED LIGHT BULB BRAND) IS SELECTED, TERMINATE AND TALLY. OTHERWISE, CONTINUE.**

**TRACK WHETHER OR NOT "Cree" IS SELECTED (FOR TALLIES OF COMPLETES).**

Q8. When you are shopping for household products such as LED light bulbs, where do you consider purchasing them, either in store or online? Please select all that apply.

- ☐ Amazon
- ☐ Drug store (CVS, Walgreens, etc.)
- ☐ Grocery store
- ☐ Home Depot
- ☐ Lowe's
- ☐ Walmart
- ☐ Other retailer

**IF THE HOME DEPOT IS SELECTED, CONTINUE. OTHERWISE, TERMINATE & TALLY.**

Q9. LED light bulbs come with different levels of light output, often described in terms of the equivalent wattage for an incandescent bulb. For your future purchases of LED light bulbs for your home, which, if any, of the following kinds of LED light bulbs will you consider purchasing? Please select all that apply.

- ☐ 40 watt equivalent LED light bulb
- ☐ 60 watt equivalent LED light bulb
- ☐ 100 watt equivalent LED light bulb
- ☐ Other LED light bulb
- ☐ Not sure or Don't know [EXCLUSIVE]
- ☐ I won't ever purchase an LED light bulb for my home [EXCLUSIVE]

**IF NEITHER 60 WATT NOR 100 WATT IS SELECTED, TERMINATE AND TALLY.  
CREATE A VARIABLE TO RECORD WHETHER QUALIFIED FOR 60 WATT – YES  
IF SELECT “60 WATT” IN Q9.  
CREATE A VARIABLE TO RECORD WHETHER QUALIFIED FOR 100 WATT – YES  
IF SELECT “100 WATT” IN Q9.**

Q10. Skipped

Q11. This question is testing your likelihood to pay attention while taking this survey. Please select “Very likely” from the list below.

- ☐ Not at all likely
- ☐ Not likely
- ☐ Neither likely nor unlikely
- ☐ Somewhat likely
- ☐ Very likely

**IF “Very likely” IS SELECTED, CONTINUE. OTHERWISE, TERMINATE & TALLY.**

Q12. Thank you. You have qualified for our survey.

If you don't know any answer to any question or if you are unsure, please select the response "Not sure or Don't know". **Please do not guess.**

If you normally **wear glasses or contact lenses** when viewing a screen, please wear them for the survey.

Also, during this interview **please do not look up any information on the internet.**

**RANDOMLY ASSIGN RESPONDENT TO ONE OF FIVE CONDITIONS:**

- (1) **TEST 1: WILL SEE TEST 1 IMAGES**
- (2) **TEST 2: WILL SEE TEST 2 IMAGES**
- (3) **TEST 3: WILL SEE TEST 3 IMAGES**
- (4) **TEST 4: WILL SEE TEST 4 IMAGES**
- (5) **CONTROL: WILL SEE CONTROL IMAGES.**

**RECORD A VARIABLE AS TO WHICH ONE OF THE FIVE CONDITIONS IS ASSIGNED.**

Q13. We would like to ask your opinion about one or two LED light bulb products you might see if you were shopping at Home Depot. You will view images of a product's package, then you will be asked some questions about that product.

**Please look at the product's package as you normally would if you were considering purchasing it.** Take as much time as you like to look at the images, and scroll if necessary to see everything on the page.

Please try to answer all questions to the best of your ability. We are interested in your opinions. There are no right or wrong answers and we will not try to sell you anything based on your answers.

**IF QUALIFIED FOR BOTH 60 WATT (Q9) AND 100 WATT (Q9),**

- **RANDOMIZE, SO ½ SEE THE 60 WATT BULB QUESTIONS (IMAGE PAGE, Q14, Q15A/B/C/D/E) FIRST AND ½ SEE THE 100 WATT BULB QUESTIONS FIRST (IMAGE PAGE, Q16, Q17A/B/C/D/E).**
- **ADD THE FOLLOWING SCREEN BEFORE THE SECOND SET OF QUESTIONS (I.E., BEFORE THE SECOND IMAGE PAGE IS SHOWN) TO INTRODUCE THAT PRODUCT.**

You will now see images and answer questions for a second LED light bulb product.

Again, please look at the product's package as you normally would if you were considering purchasing it. Take as much time as you like to look at the images, and scroll if necessary to see everything on the page.

**INSERT AN IMAGE PAGE WITH THE CORRECT SET OF IMAGES, DEPENDING ON THE GROUP THE RESPONDENT HAS BEEN RANDOMLY ASSIGNED TO (TEST 1, TEST 2, TEST 3, TEST 4, CONTROL).**

**THE FRONT OF THE PACKAGE WILL START AS THE CENTRAL IMAGE. THERE WILL BE 4 THUMBNAILS ON THE LEFT SIDE OF THE PAGE, CORRESPONDING TO THE FRONT, (PUT THIS THUMBNAIL ON THE TOP), THE BACK (PUT THIS THUMBNAIL SECOND FROM THE TOP, AND THE TWO SIDES (PUT THESE THUMBNAILS ON THE BOTTOM).]**

**PROVIDE ZOOM IN FUNCTIONALITY FOR THE MAIN IMAGE SHOWN ON THE CENTER OF THE SCREEN, AS DESCRIBED IN THE VIEWING INSTRUCTIONS BOX SHOWN TO THE RESPONDENTS. PROVIDE THUMBNAILS TO ACCESS OTHER VIEWS; CLICKING ON A THUMBNAIL ENLARGES IT, BRINGS IT INTO THE CENTRAL PART OF THE SCREEN AND ALLOWS MOUSE ROLLOVER (PC)/TAP (TABLET) FOR ZOOM-IN FUNCTIONALITY. ABOVE THE CENTRAL IMAGE, SHOW THE FOLLOWING INSTRUCTIONS IN A BOX:**

**Viewing Instructions:** Please click/tap on the thumbnail images to view a larger version of them. You can also click/tap again on any enlarged image to zoom in further. Please look at each image as if you were considering purchasing this product. You will not be able to move to the next page until you **enlarge each of the images**.

**THE NEXT BUTTON SHOULD NOT ACTIVATE UNTIL THEY HAVE CLICKED TO ENLARGE ALL THUMBNAIL IMAGES BESIDES THE FIRST (SO THEY HAVE TO CLICK TO ENLARGE ALL OTHER THUMBNAILS AND SPEND AT LEAST 15 SECONDS IN TOTAL ON THE PAGE BEFORE THE NEXT BUTTON IS ACTIVATED. FOR CLARITY, THE 15 SECONDS INCLUDES THE TIME LOOKING AT THE PAGE AS IT OPENS AS WELL AS TIME SPENT LOOKING AT THE ENLARGEMENTS OF THE THUMBNAIL IMAGES.) WHILE THE NEXT BUTTON IS INACTIVE, SHOW THE FOLLOWING TEXT NEXT TO IT: "The "Next" button will appear after you view all the images on this page, for a total of at least 15 seconds." ONCE THE NEXT BUTTON BECOMES ACTIVE, REMOVE THE TEXT.**

**START OF 60 WATT SECTION -----**

**IF NOT QUALIFIED FOR 60 WATT (WON'T PURCHASE IN Q9), SKIP THIS SECTION.**

**THESE Placeholder examples from the web for 60W Test 1 – DO NOT USE THESE IMAGES, USE THE PDFS THAT ARE BEING SENT SEPARATELY.**

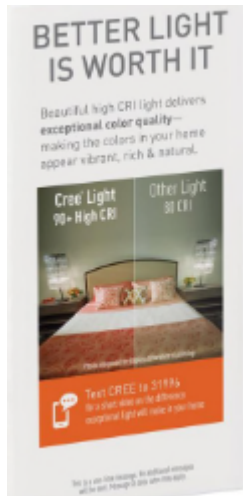
**60 WATT, TEST 1 PLACEHOLDERS  
FRONT**



**BACK**



**SIDE**



**SIDE**



**60 WATT TEST 2 IMAGES ARE BEING SENT SEPARATELY**

**60 WATT TEST 3 IMAGES ARE BEING SENT SEPARATELY**

**60 WATT TEST 4 IMAGES ARE BEING SENT SEPARATELY**

**60 WATT CONTROL IMAGES ARE BEING SENT SEPARATELY**

Q14. Were you able to view the images clearly?

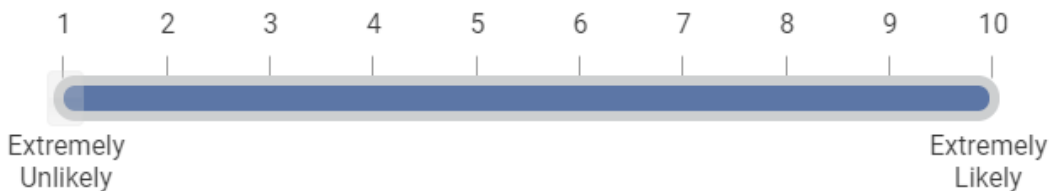
- ☐ Yes
- ☐ No
- ☐ Not sure or don't know

**IF YES, CONTINUE. OTHERWISE TERMINATE & TALLY. THIS IS A LATE TERMINATE, SO IT DOESN'T COUNT AS A COMPLETE BUT YES, WE WILL PAY THE INCENTIVE.**

**FOR THE NEXT QUESTION, THERE ARE 5 VERSIONS OF THE QUESTION, ONE CORRESPONDING TO EACH OF THE 5 GROUPS (TEST 1, TEST 2, TEST 3, TEST 4, CONTROL, I.E. Q15A/B/C/D/E). THE SCREEN SHOULD SHOW THE SAME THUMBNAILS AS THE IMAGE PAGE, ON THE LEFT SIDE. DIRECTIONS TO THE RESPONDENT AT THE TOP OF THE PAGE SHOULD SAY, "To view the images again, click on the thumbnails." CLICKING ON A THUMBNAIL SHOULD ONCE AGAIN BRING UP THE ASSOCIATED (LARGER) IMAGE, WHICH CAN BE CLOSED TO RETURN TO THE QUESTION SCREEN.**

Q15. Suppose the next time you are shopping for 60 watt equivalent LED light bulbs, either in a store or online, you see this product. The price of this package of two LED light bulbs is \$8.10 (\$4.05 per bulb).

Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means "Extremely Unlikely" and 10 means "Extremely Likely". *(Please click on the scale and move the slider to change the likelihood)*



- ☐ Not sure or don't know [EXCLUSIVE]

**FOR CLARITY, "Extremely Unlikely" AND "Extremely Likely" SHOULD APPEAR ON TWO LINES, CENTERED UNDER "1" AND "10" RESPECTIVELY, AS SHOWN IN THE IMAGE ABOVE. THE FONT SIZES**



**FOR THESE LABELS SHOULD BE THE SAME AS THE FONT SIZE FOR “Not sure or don’t know”.**

**NO INITIAL STARTING POSITION OF SLIDER. ALLOW RESPONDENT TO MOVE SLIDER BETWEEN 1 AND 10 IN INCREMENTS OF 1.**

**END OF 60 WATT SECTION -----**

**START OF 100 WATT SECTION -----**

**IF NOT QUALIFIED FOR 100 WATT (Q9), SKIP THIS SECTION.**

**100 WATT TEST 1 IMAGES ARE BEING SENT SEPARATELY**

**100 WATT TEST 2 IMAGES ARE BEING SENT SEPARATELY**

**100 WATT TEST 3 IMAGES ARE BEING SENT SEPARATELY**

**100 WATT TEST 4 IMAGES ARE BEING SENT SEPARATELY**

**100 WATT CONTROL IMAGES ARE BEING SENT SEPARATELY**

**Q16. Were you able to view the images clearly?**

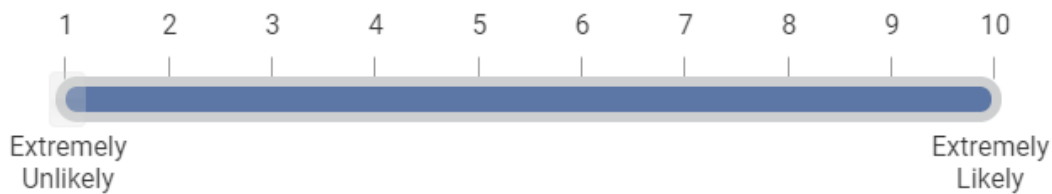
- ☐ Yes
- ☐ No
- ☐ Not sure or don’t know

**IF YES, CONTINUE. OTHERWISE TERMINATE & TALLY. THIS IS A LATE TERMINATE, SO IT DOESN’T COUNT AS A COMPLETE BUT YES, WE WILL PAY THE INCENTIVE.**

**FOR THE NEXT QUESTION, THERE ARE 5 VERSIONS OF THE QUESTION, ONE CORRESPONDING TO EACH OF THE 5 GROUPS (TEST 1, TEST 2, TEST 3, TEST 4, CONTROL, I.E., Q17A/B/C/D/E). THE SCREEN SHOULD SHOW THE EXACT SAME THUMBNAILS AS THE IMAGE PAGE, ON THE LEFT SIDE. DIRECTIONS TO THE RESPONDENT AT THE TOP OF THE PAGE SHOULD SAY, “To view the images again, click on the thumbnails.” CLICKING ON A THUMBNAIL SHOULD ONCE AGAIN BRING UP THE ASSOCIATED (LARGER) IMAGE, WHICH CAN BE CLOSED TO RETURN TO THE QUESTION SCREEN.**

- Q17. Suppose it is the next time you are shopping for a 100 watt equivalent LED light bulb, either in a store or online, and you see this product. The price of this package of one LED light bulb is \$8.78.

Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means "Extremely Unlikely" and 10 means "Extremely Likely". *(Please click on the scale and move the slider to change the likelihood)*



**FOR CLARITY, “Extremely Unlikely” AND “Extremely Likely” SHOULD APPEAR ON TWO LINES, CENTERED UNDER “1” AND “10” RESPECTIVELY, AS SHOWN IN THE IMAGE ABOVE. THE FONT SIZES FOR THESE LABELS SHOULD BE THE SAME AS THE FONT SIZE FOR “Not sure or don’t know”.**

☐ Not sure or don’t know [EXCLUSIVE]

**NO INITIAL STARTING POSITION OF SLIDER. ALLOW RESPONDENT TO MOVE SLIDER BETWEEN 1 AND 10 IN INCREMENTS OF 1.**

**END OF 100 WATT SECTION -----**

**FOR Q17.5 THE THUMBNAILED SHOWN ARE THE SAME AS FOR Q15A/B/C/D/E, WITH THE Q17.5 FILL-IN-THE-YEARS-QUESTION INSTEAD OF THE Q15 RATING QUESTION. THERE ARE 5 VERSIONS OF THE QUESTION, ONE CORRESPONDING TO EACH OF THE 5 GROUPS (TEST 1, TEST 2, TEST 3, TEST 4, CONTROL, I.E. Q17.5A/B/C/D/E). THE SCREEN SHOULD SHOW THE SAME 60 WATT THUMBNAILED AS SHOWN ON THE LEFT SIDE OF Q15A/B/C/D/E. CLICKING ON A THUMBNAILED SHOULD ONCE AGAIN BRING UP THE ASSOCIATED (LARGER) IMAGE, WHICH CAN BE CLOSED TO RETURN TO THE QUESTION SCREEN.**

**IF NOT QUALIFIED FOR 60 WATT (WON’T PURCHASE IN Q9), SKIP TO Q18.**

Q17.5. I'd like to ask one more question about this **60 watt equivalent** LED light bulb[**IF THE RESPONDENT SAW BOTH 60 WATT AND 100 WATT, AND IF 60 WATT WAS SHOWN FIRST, INSERT "you saw earlier"**]. How long would you expect this LED light bulb to last, if it were in use in your home?

To view the images again, please click on the thumbnails.

\_\_\_\_\_ years

**ALLOW REAL NUMBER ENTRY (I.E., DECIMALS ARE OK). RANGE IS 0 TO 99.**

Q18. To confirm our survey is working properly, could you please confirm which one of the following types of products you were shown images of and asked to rate, in the preceding questions?

- ☐ Android smartphone
- ☐ Dog food
- ☐ Flatbread such as pita or naan
- ☐ LED light bulb
- ☐ Blue jeans

**IF LED LIGHT BULB IS NOT SELECTED, TERMINATE AND TALLY. THIS IS A LATE TERMINATE, BUT WE WILL NOT PAY THE INCENTIVE IF THEY CAN'T TELL US WHAT PRODUCT THEY'VE BEEN ANSWERING QUESTIONS ABOUT FOR THE LAST MANY SCREENS. (THIS IS A FINAL QC/PAYING ATTENTION TEST QUESTION).**

**END OF SURVEY. RETURN THE RESPONDENT TO PANEL THANK YOU PAGE.**

**TALLY AS A COMPLETED INTERVIEW IF AND ONLY IF THE END OF THE SURVEY IS REACHED WITHOUT TERMINATION.**

**FOR TALLYING PURPOSES, TRACK AND REPORT DAILY THE NUMBER OF COMPLETES BY:**

- **AGE (Q1)**
- **GENDER (Q2)**
- **WHETHER HAS PURCHASED CREE LED LIGHT BULBS (Q7)**
- **WHETHER SAW 60 WATT IMAGES (Q9)**
- **WHETHER SAW 100 WATT IMAGES (Q9)**
- **WHETHER ASSIGNED TO TEST 1, TEST 2, TEST 3, TEST 4, CONTROL**

**PLEASE ALSO MONITOR AND REPORT DAILY ON QUALIFICATION RATES.**

**Appendix D: Exhibits**

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 Jeff Young v. Cree Inc.

Exhibit D.1

Participation Rates in the Survey

Participation Rates in the Survey			
		Count	% of Total respondents entering the survey
<b>Total respondents participating in the survey</b>	(1)	<b>13,310</b>	<b>100.0%</b>
<b>Screened out</b>		<b>11,099</b>	<b>83.4%</b>
Age less than 18 or failed to validate	(2)	1,405	10.6%
Failed to validate gender	(3)	257	1.9%
Failed CAPTCHA	(4)	544	4.1%
Works for light bulb manufacturer	(5)	62	0.5%
Not a purchaser of LED light bulb	(6)	6,082	45.7%
Active decision maker	(7)	280	2.1%
Failed red herring test	(8)	200	1.5%
Did not consider purchase at Home Depot	(9)	1,977	14.9%
Not a purchaser of 60W or 100W LED light bulb	(10)	232	1.7%
Failed attention check #1	(11)	37	0.3%
Unable to view the images clearly	(12)	9	0.1%
Failed attention check #2	(13)	14	0.1%
<b>Failed quality control questions</b>	(14)	<b>2,466</b>	<b>18.5%</b>
<b>Failed qualification questions</b>	(15)	<b>8,633</b>	<b>64.9%</b>
<b>Dropped out</b>	(16)	<b>209</b>	<b>1.6%</b>
<b>Completed surveys</b>		<b>2,002</b>	<b>15.0%</b>
		One Product	Both Products
Minimum Length		1 min 15 sec	1 min 54 sec
Median Length		3 min 37 sec	4 min 57 sec
Speeders	(17)	0	0.0%
<b>Final Sample</b>		<b>2,002</b>	<b>15.0%</b>

Notes:

- (1) Includes respondents who provided an answer to question Q1.
- (2) Respondents were terminated in question Q1 if they selected an answer that did not match the parameters passed by the panel, or if they answered "17 or younger".
- (3) Respondents were terminated in question Q2 if they selected "Male" or "Female", and their selected answer did not match the parameters passed by the panel.
- (4) Respondents were terminated in question Q3 if they could not be verified as a human by CAPTCHA.
- (5) Respondents were terminated in question Q4 if they indicated that they work or have household members who work at a light bulb manufacturer.
- (6) Respondents were terminated in question Q5 if they did not personally purchase an LED light bulb in the past 12 months.
- (7) Respondents were terminated in question Q6 if, during their most recent purchase, they were not actively involved in the decision as to which brand and type of LED light bulb to purchase.
- (8) Respondents were terminated in question Q7 if they selected answer option "Arnden", which is a fictitious brand of LED light bulbs.
- (9) Respondents were terminated in question Q8 if they did not consider purchasing household products such as LED light bulbs from "Home Depot".
- (10) Respondents were terminated in question Q9 if they will not consider purchasing a 60 or 100 watt equivalent LED light bulb for their home in the future.
- (11) Respondents were terminated in question Q11 if they did not select answer option "Very likely" to show they were paying attention.
- (12) Respondents were terminated in question Q14 or Q16 if they indicated that they were unable to view the images clearly.  
4 respondents were terminated in Q14, and 5 respondents were terminated in Q16.
- (13) Respondents were terminated in question Q18 if they did not select answer option "LED light bulbs" when asked to identify the type of product they were shown images of and asked to rate.
- (14) Includes respondents who were terminated in Q1, Q2, Q3, Q7, Q11, Q14, Q16 or Q18.
- (15) Includes respondents who were terminated in Q4, Q5, Q6, Q8 or Q9.
- (16) Represents respondents who self-terminated at any point after answering Q1 and before completing the survey.
- (17) Respondents were excluded from the final sample if they completed the survey in less than 1/3 of the median length of the interview for respondents who completed the survey having seen the same number of products.

Source for Exhibit D.1:

- Final Results Summary.docx
- Appendix J

**CONFIDENTIAL - OUTSIDE COUNSEL ONLY****Exhibit D.2****Jeff Young v. Cree Inc.****Demographic Distribution in the Inbound Sample****Age Distribution**

Age Category	Census for US Adult (%)	Inbound Sample (%)	Inbound Sample (#)
18 to 24	12.8%	9.2%	1,175
25 to 39	25.9%	25.3%	3,249
40 to 54	26.1%	28.8%	3,691
55 to 64	16.4%	17.3%	2,221
65 or older	18.9%	19.4%	2,488
Total (1)	100.0%	100.0%	12,824

**Notes:**

- (1) Includes respondents whose answer in question Q1 matched the parameters passed by the panel.

**Gender Distribution**

Gender Category	Census for US Adult (%)	Inbound Sample (%)	Inbound Sample (#)
Male	47.7%	44.9%	5,313
Female	52.3%	55.1%	6,510
Total (2)	100.0%	100.0%	11,823

**Notes:**

- (2) Includes respondents whose answer in question Q2 either matched the parameters passed by the panel, or for whom the panel had no information on gender, and excludes 61 respondents who answered "Non-binary" or "Prefer not to state" in question Q2.

**Region Distribution**

Region Category	Census for US Adult (%)	Inbound Sample (%)	Inbound Sample (#)
Northeast	18.1%	20.6%	3,146
Midwest	21.7%	21.5%	3,292
South	36.9%	36.2%	5,535
West	23.3%	21.7%	3,318
Total (3)	100.0%	100.0%	15,291

**Notes:**

- (3) Includes all survey entrants, including those who did not answer Q1, for whom panel data on state was available.

**Source for Exhibit D.2:**

- Final Results Summary.docx
- US Census Bureau; American Community Survey 5-year (2012-2016)

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Exhibit D.3

Likelihood of Purchasing Cree 60 Watt Equivalent LED Light Bulb

Q15. Suppose the next time you are shopping for 60 watt equivalent LED light bulbs, either in a store or online, you see this product. The price of this package of two LED light bulbs is \$8.10 (\$4.05 per bulb). Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means "Extremely Unlikely" and 10 means "Extremely Likely".

Likelihood of Purchasing Cree 60 Watt Equivalent LED Light Bulb

Sample Size: 1788

Group	Mean	95% Confidence Interval around the Mean		(3)	Respondents Answering Q15 (#)	Don't know / Unsure (#)	Total Respondents (#)
Test 1	7.1	6.8	-	7.3	343	9	352
Test 2	7.1	6.9	-	7.3	344	9	353
Test 3	7.1	6.9	-	7.4	348	8	356
Test 4	7.1	6.9	-	7.3	347	12	359
Control	7.1	6.9	-	7.4	359	9	368

	Test 1	Test 2	Test 3	Test 4	Control
82% LESS ENERGY CONSUMPTION*	✓	✓	✓	✓	
Our LED bulbs work better and last longer; LONGER LIFE (1)	✓	✓	✓		
100% SATISFACTION GUARANTEE (2)	✓	✓			
\$226 LIFETIME ENERGY SAVINGS*	✓				

\* At \$0.11 per kWh when compared to 60W incandescent. 25,000 hour lifetime.

(1) In the cells without a ✓, "LONGER LIFE" on the front and back panels is replaced by "LIFE."

(2) In the cells without a ✓, "100% SATISFACTION GUARANTEE" is deleted from the front and back panels, and on the side panel is replaced by "OUR SATISFACTION GUARANTEE."

P-value (Test 1 vs Control)	(4)	0.730
P-value (Test 2 vs Control)	(4)	0.970
P-value (Test 3 vs Control)	(4)	0.927
P-value (Test 4 vs Control)	(4)	0.844
P-value (Test 1 vs Test 2)	(4)	0.758
P-value (Test 2 vs Test 3)	(4)	0.898
P-value (Test 3 vs Test 4)	(4)	0.777

Notes:

(3) Confidence intervals calculated using bootstrapping method.

(4) P-value is calculated using a two-tail t-test assuming unequal variances.

† Statistically significantly different at the 95% confidence level (p-value < 0.05).

†† Statistically significantly different at the 99% confidence level (p-value < 0.01).

Source for Exhibit D.3:

- Appendix J

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 Jeff Young v. Cree Inc.

Exhibit D.4

Likelihood of Purchasing Cree 100 Watt LED Light Bulb

Q17. Suppose it is the next time you are shopping for a 100 watt equivalent LED light bulb, either in a store or online, and you see this product. The price of this package of one LED light bulb is \$8.78. Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means "Extremely Unlikely" and 10 means "Extremely Likely".

**Likelihood of Purchasing Cree 100 Watt Equivalent LED Light Bulb**

Sample Size: 1306

Group	Mean	95% Confidence Interval around the Mean	(3)	Respondents Answering Q17 (#)	Don't know / Unsure (#)	Total Respondents (#)
Test 1	6.7	6.4 - 7.0		254	9	263
Test 2	6.7	6.4 - 6.9		258	9	267
Test 3	6.4	6.1 - 6.8		242	9	251
Test 4	6.8	6.5 - 7.1		249	6	255
Control	6.6	6.3 - 6.9		259	11	270

	Test 1	Test 2	Test 3	Test 4	Control
82% LESS ENERGY CONSUMPTION*	✓	✓	✓	✓	
Our LED bulbs work better and last longer; LONGER LIFE (1)	✓	✓	✓		
100% SATISFACTION GUARANTEE (2)	✓	✓			
\$226 LIFETIME ENERGY SAVINGS*	✓				

\* At \$0.11 per kWh when compared to 100W incandescent. 25,000 hour lifetime.

- (1) In the cells without a ✓, "LONGER LIFE" on the front and back panels is replaced by "LIFE."  
 (2) In the cells without a ✓, "100% SATISFACTION GUARANTEE" is deleted from the front and back panels, and on the side panel is replaced by "OUR SATISFACTION GUARANTEE."

P-value (Test 1 vs Control)	(4)	0.665
P-value (Test 2 vs Control)	(4)	0.699
P-value (Test 3 vs Control)	(4)	0.555
P-value (Test 4 vs Control)	(4)	0.307
P-value (Test 1 vs Test 2)	(4)	0.949
P-value (Test 2 vs Test 3)	(4)	0.345
P-value (Test 3 vs Test 4)	(4)	0.127

**Notes:**

- (3) Confidence intervals calculated using bootstrapping method.  
 (4) P-value is calculated using a two-tail t-test assuming unequal variances.  
 † Statistically significantly different at the 95% confidence level (p-value < 0.05).  
 †† Statistically significantly different at the 99% confidence level (p-value < 0.01).

**Source for Exhibit D.4:**

- Appendix J



**CONFIDENTIAL - OUTSIDE COUNSEL ONLY****Exhibit D.5****Jeff Young v. Cree Inc.****Expected Lifetime of Cree 60 Watt Equivalent LED Light Bulb**

Q17.5. I'd like to ask one more question about this 60 watt equivalent LED light bulb. How long would you expect this LED light bulb to last, if it were in use in your home?

**Expected Lifetime of Cree 60 Watt Equivalent LED Light Bulb**

Sample Size: 1788

Group	Mean	95% Confidence Interval around the Mean			Respondents (#)
Test 1	11.7	10.9	-	12.5	352
Test 2	12.8	11.9	-	13.7	353
Test 3	12.6	11.7	-	13.5	356
Test 4	13.5	12.6	-	14.6	359
Control	13.0	12.2	-	13.9	368

	Test 1	Test 2	Test 3	Test 4	Control
82% LESS ENERGY CONSUMPTION*	✓	✓	✓	✓	
Our LED bulbs work better and last longer; LONGER LIFE (1)	✓	✓	✓		
100% SATISFACTION GUARANTEE (2)	✓	✓			
\$226 LIFETIME ENERGY SAVINGS*	✓				

\* At \$0.11 per kWh when compared to 60W incandescent. 25,000 hour lifetime.

(1) In the cells without a ✓, "LONGER LIFE" on the front and back panels is replaced by "LIFE."

(2) In the cells without a ✓, "100% SATISFACTION GUARANTEE" is deleted from the front and back panels, and on the side panel is replaced by "OUR SATISFACTION GUARANTEE."

P-value (Test 1 vs Control)	(3) †	0.031
P-value (Test 2 vs Control)	(3)	0.794
P-value (Test 3 vs Control)	(3)	0.566
P-value (Test 4 vs Control)	(3)	0.391
P-value (Test 1 vs Test 2)	(3)	0.058
P-value (Test 2 vs Test 3)	(3)	0.748
P-value (Test 3 vs Test 4)	(3)	0.167

**Notes:**

(3) P-value is calculated using a two-tail t-test assuming unequal variances.

(4) Confidence intervals calculated using bootstrapping method.

† Statistically significantly different at the 95% confidence level (p-value < 0.05).

†† Statistically significantly different at the 99% confidence level (p-value < 0.01).

**Source for Exhibit D.5:**

- Appendix J

**CONFIDENTIAL - OUTSIDE COUNSEL ONLY**  
**Jeff Young v. Cree Inc.**

**Exhibit D.6**

**Comparison of Expected Lifetime of Cree 60 Watt Equivalent LED Light Bulb Between Past Purchasers and Not Past Purchasers of Cree**

Q7. Which of the following brands of LED light bulbs have you ever purchased? Please select all that apply.

Q17.5. I'd like to ask one more question about this 60 watt equivalent LED light bulb. How long would you expect this LED light bulb to last, if it were in use in your home?

**Expected Lifetime of Cree 60 Watt Equivalent LED Light Bulb**

Sample Size: 1788

Past Purchasers of Cree (Q7)				Not Past Purchasers of Cree (Q7)				P-value (Past Purchasers of Cree vs Not Past Purchasers of Cree) (3)
Group	Mean	Median	Respondents (#)	Mean	Median	Respondents (#)		
Test 1	10.3	10.0	37	11.8	10.0	315	0.237	
Test 2	14.4	15.0	41	12.6	10.0	312	0.147	
Test 3	12.7	10.0	39	12.6	10.0	317	0.913	
Test 4	15.5	20.0	42	13.3	10.0	317	0.079	
Control	13.3	10.0	37	12.9	10.0	331	0.762	
All	13.3 (4)	10.0	196	12.6 (5)	10.0	1592	0.233	

**% of Respondents Who Expected that Cree 60 Watt Equivalent LED Light Bulb Would  
Last Less than or Equal to 2 Years**

Sample Size: 1788

Past Purchasers of Cree (Q7)			Not Past Purchasers of Cree (Q7)		
	Expects	Respondents	Expects	Respondents	
Group	≤ 2 years (%)	(#)	≤ 2 years (%)	(#)	P-value (6)
Test 1	13.5%	37	16.2%	315	0.674
Test 2	2.4%	41	13.5%	312	0.042 †
Test 3	7.7%	39	17.0%	317	0.133
Test 4	4.8%	42	13.9%	317	0.097
Control	8.1%	37	13.6%	331	0.347
All	7.1% (7)	196	14.8% (8)	1592	0.003 ††

	Test 1	Test 2	Test 3	Test 4	Control
<b>82% LESS ENERGY CONSUMPTION*</b>	✓	✓	✓	✓	
<b>Our LED bulbs work better and last longer; LONGER LIFE (1)</b>	✓	✓	✓		
<b>100% SATISFACTION GUARANTEE (2)</b>	✓	✓			
<b>\$226 LIFETIME ENERGY SAVINGS*</b>	✓				

\* At \$0.11 per kWh when compared to 60W incandescent. 25,000 hour lifetime.

(1) In the cells without a ✓, "LONGER LIFE" on the front and back panels is replaced by "LIFE."

(2) In the cells without a ✓, "100% SATISFACTION GUARANTEE" is deleted from the front and back panels, and on the side panel is replaced by "OUR SATISFACTION GUARANTEE."

**Notes:**

- (3) P-value is calculated using a two-tail t-test assuming unequal variances.  
(4) The 95% confidence interval around the mean is 12.4 - 14.4. Confidence intervals calculated using bootstrapping method.  
(5) The 95% confidence interval around the mean is 12.2 - 13.1. Confidence intervals calculated using bootstrapping method.  
(6) P-value is calculated using a two-tailed proportion test.  
(7) The 95% confidence interval around the proportion is 3.5% - 10.7%. Confidence intervals calculated using the normal approximation to the binomial calculation.  
(8) The 95% confidence interval around the proportion is 13.1% - 16.6%. Confidence intervals calculated using the normal approximation to the binomial calculation.  
† Statistically significantly different at the 95% confidence level (p-value < 0.05).  
†† Statistically significantly different at the 99% confidence level (p-value < 0.01).

**Source for Exhibit D.6:**

- Appendix J

**CONFIDENTIAL - OUTSIDE COUNSEL ONLY**  
**Jeff Young v. Cree Inc.**

**Exhibit D.7**

Time Since Purchase of Cree 60 Watt and 100 Watt Equivalent LED Light Bulbs if Purchased on or before January 28, 2020

		2013	(2)	2014	(3)	2015	(3)	2016	(3)	2017	(3)	2018	(3)	2019	(3) (4)	Partial 2020	(5)
Unit Sales Relative to 2015	(1)	18.77%		67.61%		100%		47.03%		49.20%		26.63%		26.63%		1.96%	
Average time since purchase	(6)	3.9															
Time since purchase	(6)	Units (%)															
1 or more years		92.1%															
2 or more years		84.2%															
3 or more years		70.2%															
4 or more years		56.2%															
5 or more years		27.8%															
6 or more years		7.0%															

**Notes:**

- (1) Assumption provided by counsel. Unit sales were at their peak in 2015.
- (2) Unit sales began in March 2013, per Plaintiff's Notice of Motion and Renewed Motion for Class Certification dated December 13, 2019, p. 1. To be conservative, unit sales were assumed to take place, on average, uniformly throughout the period ranging from April 1, 2013 to December 31, 2013.
- (3) Unit sales from 2014 to 2019 were assumed to take place, on average, uniformly throughout each period.
- (4) Full year data is not available for 2019. My understanding is that 2019 unit sales were less than 2018 unit sales. For this purpose, unit sales in 2019 were assumed to be equal to the unit sales in 2018.
- (5) Data is not available for 2020. Unit sales for partial year 2020 were prorated at the same rate as unit sales in 2018 and 2019.
- (6) Time since purchase refers to the time period from the date of sale to the middle of the fieldwork period ranging from January 24, 2020 to February 2, 2020, which is January 28, 2020.

## **Appendix E: Survey Results**



## Table of Contents

Table No.	Question Title	Base	Counts
Table 1	Country. Country from URL	Base: Total Respondents	2002
Table 2	Q1. What is your age?	Base: Total Respondents	2002
Table 3	Q2. What is your gender?	Base: Total Respondents	2002
Table 4	Q4. Which, if any, of the following types of businesses, do you or any member of your household currently work for?	Base: Total Respondents	2002
Table 5	Q5. Which, if any, of the following products did you personally purchase in the last 12 months?	Base: Total Respondents	2002
Table 6	Q6. Please focus on your most recent purchase of an LED light bulb for your home. For that purchase, how involved were you personally	Base: Total Respondents	2002
Table 7	Q7. Which of the following brands of LED light bulbs have you ever purchased?	Base: Total Respondents	2002
Table 8	Q8. When you are shopping for household products such as LED light bulbs, where do you consider purchasing them, either in store or online?	Base: Total Respondents	2002
Table 9	Q9. LED light bulbs come with different levels of light output, often described in terms of the equivalent wattage for an incandescent bulb. For your future purchases of	Base: Total Respondents	2002
Table 10	Q11. This question is testing your likelihood to pay attention while taking this survey. Please select 'Very likely' from the list below.	Base: Total Respondents	2002
Table 11	xGroup. Stores the Group that will be asked thru out the survey.	Base: Total Respondents	2002
Table 12	Q14. Were you able to view the images clearly?	Base: Respondents who consider '60 watt equivalent LED light bulb' for purchasing	1788
Table 13	Q15. TEST 1 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 1 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	352
Table 14	Q15. TEST 2 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 2 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	353
Table 15	Q15. TEST 3 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 3 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	356
Table 16	Q15. TEST 4 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 4 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	359
Table 17	Q15. CONTROL - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: CONTROL Respondents consider '60 WATT equivalent LED light bulb' for purchasing	368
Table 18	Q16. Were you able to view the images clearly?	Base: Respondents who consider '100 watt equivalent LED light bulb' for purchasing	1306
Table 19	Q17. TEST 1 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 1 Respondents consider '100 WATT equivalent LED light bulb' for purchasing	263
Table 20	Q17. TEST 2 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 2 Respondents consider '100 WATT equivalent LED light bulb' for purchasing	267
Table 21	Q17. TEST 3 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 3 Respondents consider '100 WATT equivalent LED light bulb' for purchasing	251
Table 22	Q17. TEST 4 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: TEST 4 Respondents consider '100 WATT equivalent LED light bulb' for purchasing	255
Table 23	Q17. CONTROL - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?	Base: CONTROL Respondents consider '100 WATT equivalent LED light bulb' for purchasing	270
Table 24	Q17x5. TEST 1 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?	Base: TEST 1 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	352
Table 25	Q17x5. TEST 2 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?	Base: TEST 2 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	353

<b>Table 26</b>	Q17x5. TEST 3 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?	Base: TEST 3 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	356
<b>Table 27</b>	Q17x5. TEST 4 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?	Base: TEST 4 Respondents consider '60 WATT equivalent LED light bulb' for purchasing	359
<b>Table 28</b>	Q17x5. CONTROL - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?	Base: CONTROL Respondents consider '60 WATT equivalent LED light bulb' for purchasing	368
<b>Table 29</b>	Q18. To confirm our survey is working properly, could you please confirm which one of the following types of products you were shown images of and asked to rate, in the preceding questions?	Base: Total Respondents	2002

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Banner1

[Table 1](#)

Country. Country from URL

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A</b> <b>2002</b>	<b>B</b> <b>122</b>	<b>C</b> <b>433</b>	<b>D</b> <b>593</b>	<b>E</b> <b>387</b>	<b>F</b> <b>467</b>	<b>G</b> <b>1102</b>	<b>H</b> <b>893</b>	<b>I</b> <b>7</b>	<b>J</b> <b>404</b>	<b>K</b> <b>399</b>	<b>L</b> <b>400</b>	<b>M</b> <b>399</b>	<b>N</b> <b>400</b>	<b>O</b> <b>210</b>	<b>P</b> <b>1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
USA	2002 100.0%	122 100.0%	433 100.0%	593 100.0%	387 100.0%	467 100.0%	1102 100.0%	893 100.0%	7 100.0%	404 100.0%	399 100.0%	400 100.0%	399 100.0%	400 100.0%	210 100.0%	1792 100.0%

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

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[Table 2](#)

Q1. What is your age?

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A</b> <b>2002</b>	<b>B</b> <b>122</b>	<b>C</b> <b>433</b>	<b>D</b> <b>593</b>	<b>E</b> <b>387</b>	<b>F</b> <b>467</b>	<b>G</b> <b>1102</b>	<b>H</b> <b>893</b>	<b>I</b> <b>7</b>	<b>J</b> <b>404</b>	<b>K</b> <b>399</b>	<b>L</b> <b>400</b>	<b>M</b> <b>399</b>	<b>N</b> <b>400</b>	<b>O</b> <b>210</b>	<b>P</b> <b>1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
17 or younger (17)	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
18 to 24 (21)	122 6.1%	122 100.0%	0 -	0 -	0 -	0 -	50 4.5%	70 7.8%	2 28.6%	31 7.7%	22 5.5%	32 8.0%	20 5.0%	17 4.3%	15 7.1%	107 6.0%
		CDEF						G	GH	N		N				
25 to 39 (32)	433 21.6%	0 -	433 100.0%	0 -	0 -	0 -	195 17.7%	235 26.3%	3 42.9%	78 19.3%	97 24.3%	94 23.5%	86 21.6%	78 19.5%	44 21.0%	389 21.7%
			BDEF					G								
40 to 54 (47)	593 29.6%	0 -	0 -	593 100.0%	0 -	0 -	343 31.1%	249 27.9%	1 14.3%	119 29.5%	120 30.1%	104 26.0%	118 29.6%	132 33.0%	59 28.1%	534 29.8%
				BCEF										L		
55 to 64 (59.5)	387 19.3%	0 -	0 -	0 -	387 100.0%	0 -	235 21.3%	152 17.0%	0 -	76 18.8%	80 20.1%	78 19.5%	78 19.5%	75 18.8%	35 16.7%	352 19.6%
					BCDF		H									
65 or older (65)	467 23.3%	0 -	0 -	0 -	0 -	467 100.0%	279 25.3%	187 20.9%	1 14.3%	100 24.8%	80 20.1%	92 23.0%	97 24.3%	98 24.5%	57 27.1%	410 22.9%
						BCDE	H									
Mean	48.79	21	32	47	59.5	65	50.39	46.91	35.71	48.92	48.04	47.97	49.28	49.72	48.97	48.77
							HI	I								
Std. Err.	0.31	0	0	0	0	0	0.4	0.48	5.89	0.71	0.69	0.73	0.68	0.66	0.99	0.33

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

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Table 3

Q2. What is your gender?

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A</b> <b>2002</b>	<b>B</b> <b>122</b>	<b>C</b> <b>433</b>	<b>D</b> <b>593</b>	<b>E</b> <b>387</b>	<b>F</b> <b>467</b>	<b>G</b> <b>1102</b>	<b>H</b> <b>893</b>	<b>I</b> <b>7</b>	<b>J</b> <b>404</b>	<b>K</b> <b>399</b>	<b>L</b> <b>400</b>	<b>M</b> <b>399</b>	<b>N</b> <b>400</b>	<b>O</b> <b>210</b>	<b>P</b> <b>1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Male	1102 55.0%	50 41.0%	195 45.0%	343 57.8%	235 60.7%	279 59.7%	1102 100.0%	0 -	0 -	198 49.0%	224 56.1%	222 55.5%	239 59.9%	219 54.8%	130 61.9%	972 54.2%
Female	893 44.6%	70 57.4%	235 54.3%	249 42.0%	152 39.3%	187 40.0%	0 -	893 100.0%	0 -	203 50.2%	173 43.4%	178 44.5%	160 40.1%	179 44.8%	80 38.1%	813 45.4%
Non-binary	7 0.3%	DEF 2 1.6%	DEF 3 0.7%	1 0.2%	0 -	1 0.2%	0 -	0 -	7 100.0%	3 0.7%	2 0.5%	0 -	0 -	2 0.5%	0 -	7 0.4%
Prefer not to state	0 -	DEF 0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

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Table 4

Q4. Which, if any, of the following types of businesses, do you or any member of your household currently work for?

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A</b> <b>2002</b>	<b>B</b> <b>122</b>	<b>C</b> <b>433</b>	<b>D</b> <b>593</b>	<b>E</b> <b>387</b>	<b>F</b> <b>467</b>	<b>G</b> <b>1102</b>	<b>H</b> <b>893</b>	<b>I</b> <b>7</b>	<b>J</b> <b>404</b>	<b>K</b> <b>399</b>	<b>L</b> <b>400</b>	<b>M</b> <b>399</b>	<b>N</b> <b>400</b>	<b>O</b> <b>210</b>	<b>P</b> <b>1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
A smartphone manufacturer	14 0.7%	9 7.4%	3 0.7%	2 0.3%	0 -	0 -	8 0.7%	5 0.6%	1 14.3%	5 1.2%	4 1.0%	1 0.3%	2 0.5%	2 0.5%	2 1.0%	12 0.7%
A pet food company	4 0.2%	CDEF 3 2.5%	0 -	1 0.2%	0 -	0 -	1 0.1%	2 0.2%	1 14.3%	3 0.7%	1 0.3%	0 -	0 -	0 -	0 -	4 0.2%
A bakery or bread-making company	6 0.3%	CDEF 4 3.3%	1 0.2%	0 -	1 0.3%	0 -	2 0.2%	3 0.3%	1 14.3%	1 0.2%	0 -	2 0.5%	2 0.5%	1 0.3%	1 0.5%	5 0.3%
A light bulb manufacturer	0 -	CDEF 0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
A company that makes clothing	14 0.7%	13 10.7%	1 0.2%	0 -	0 -	0 -	4 0.4%	9 1.0%	1 14.3%	2 0.5%	3 0.8%	3 0.8%	1 0.3%	5 1.3%	2 1.0%	12 0.7%
None of the above	1974 98.6%	103 84.4%	428 98.8%	590 99.5%	386 99.7%	467 100.0%	1089 98.8%	879 98.4%	6 85.7%	399 98.8%	391 98.0%	395 98.8%	395 99.0%	394 98.5%	206 98.1%	1768 98.7%
		B	B	B	B	BC	I	I								

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P



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Table 5

Q5. Which, if any, of the following products did you personally purchase in the last 12 months?

Base: Total Respondents

[illegible]

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 6

Q6. Please focus on your most recent purchase of an LED light bulb for your home. For that purchase, how involved were you personally in the decision as to which brand and type of LED light bulb to get?

Base: Total Respondents

[illegible]

I was not at all involved in the decision	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
Not sure or Don't remember	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
I haven't ever bought an LED light bulb for my home	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 7

Q7. Which of the following brands of LED light bulbs have you ever purchased?  
Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 2002</b>	<b>B 122</b>	<b>C 433</b>	<b>D 593</b>	<b>E 387</b>	<b>F 467</b>	<b>G 1102</b>	<b>H 893</b>	<b>I 7</b>	<b>J 404</b>	<b>K 399</b>	<b>L 400</b>	<b>M 399</b>	<b>N 400</b>	<b>O 210</b>	<b>P 1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Arsden	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
Cree	214 10.7%	4 3.3%	34 7.9%	64 10.8%	61 15.8%	51 10.9%	158 14.3%	55 6.2%	1 14.3%	42 10.4%	44 11.0%	41 10.3%	46 11.5%	41 10.3%	25 11.9%	189 10.5%
Feit	206 10.3%	7 5.7%	29 6.7%	B 67 11.3%	BCDF 48 12.4%	B 55 11.8%	H 149 13.5%	55 6.2%	2 28.6%	41 10.1%	41 10.3%	41 10.3%	39 9.8%	44 11.0%	31 14.8%	175 9.8%
				C 11.3%	BC 12.4%	C 11.8%	H 13.5%									
General Electric (GE)	1258 62.8%	83 68.0%	331 76.4%	393 66.3%	219 56.6%	232 49.7%	665 60.3%	588 65.8%	5 71.4%	251 62.1%	232 58.1%	266 66.5%	250 62.7%	259 64.8%	119 56.7%	1139 63.6%
				EF 66.3%	DEF 56.6%	F 49.7%		G 65.8%				K 66.5%				
Philips	1383 69.1%	106 86.9%	319 73.7%	439 74.0%	260 67.2%	259 55.5%	762 69.1%	617 69.1%	4 57.1%	283 70.0%	274 68.7%	281 70.3%	268 67.2%	277 69.3%	148 70.5%	1235 68.9%
				CDEF 74.0%	EF 67.2%	F 55.5%										
Sylvania	979 48.9%	33 27.0%	209 48.3%	343 57.8%	204 52.7%	190 40.7%	537 48.7%	439 49.2%	3 42.9%	193 47.8%	192 48.1%	197 49.3%	198 49.6%	199 49.8%	92 43.8%	887 49.5%
				BF 57.8%	BCF 52.7%	BF 40.7%										
Other brand	284 14.2%	14 11.5%	46 10.6%	79 13.3%	64 16.5%	81 17.3%	163 14.8%	121 13.5%	0 -	53 13.1%	61 15.3%	64 16.0%	46 11.5%	60 15.0%	24 11.4%	260 14.5%
				C 13.3%	C 16.5%	C 17.3%										
Don't remember/not sure	190 9.5%	2 1.6%	19 4.4%	35 5.9%	46 11.9%	88 18.8%	97 8.8%	92 10.3%	1 14.3%	45 11.1%	39 9.8%	33 8.3%	40 10.0%	33 8.3%	19 9.0%	171 9.5%
				BCD 5.9%	BCDE 11.9%	BCDE 18.8%										

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 8

Q8. When you are shopping for household products such as LED light bulbs, where do you consider purchasing them, either in store or online?  
Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Total	2002	122	433	593	387	467	1102	893	7	404	399	400	399	400	210	1792
Amazon	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	754 37.7%	59 48.4%	218 50.3%	223 37.6%	117 30.2%	137 29.3%	424 38.5%	327 36.6%	3 42.9%	151 37.4%	149 37.3%	153 38.3%	147 36.8%	154 38.5%	92 43.8%	662 36.9%
Drug store (CVS, Walgreens, etc.)	258 12.9%	DEF 23 18.9%	DEF 73 16.9%	EF 83 14.0%	39 10.1%	40 8.6%	126 11.4%	130 14.6%	2 28.6%	64 15.8%	47 11.8%	46 11.5%	45 11.3%	56 14.0%	42 20.0%	216 12.1%
	Grocery store	388 19.4%	EF 22 18.0%	EF 107 24.7%	F 118 19.9%	65 16.8%	76 16.3%	184 16.7%	G 203 22.7%	1 14.3%	77 19.1%	65 16.3%	77 19.3%	81 20.3%	88 22.0%	P 33 15.7%
Home Depot		2002 100.0%	122 100.0%	433 100.0%	593 100.0%	387 100.0%	467 100.0%	1102 100.0%	893 100.0%	7 100.0%	404 100.0%	399 100.0%	400 100.0%	399 100.0%	K 400 100.0%	210 100.0%
	Lowe's	1133 56.6%	69 56.6%	248 57.3%	344 58.0%	217 56.1%	255 54.6%	641 58.2%	488 54.6%	4 57.1%	220 54.5%	237 59.4%	220 55.0%	219 54.9%	237 59.3%	121 57.6%
Walmart	1056 52.7%	80 65.6%	269 62.1%	328 55.3%	187 48.3%	192 41.1%	563 51.1%	491 55.0%	2 28.6%	219 54.2%	206 51.6%	206 51.5%	201 50.4%	224 56.0%	95 45.2%	961 53.6%
	Other retailer	322 16.1%	DEF 7 5.7%	DEF 55 12.7%	EF 85 14.3%	F 82 21.2%	93 19.9%	174 15.8%	147 16.5%	1 14.3%	62 15.3%	63 15.8%	57 14.3%	55 13.8%	85 21.3%	31 14.8%

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 9

Q9. LED light bulbs come with different levels of light output, often described in terms of the equivalent wattage for an incandescent bulb. For your future purchases of

Q6: LED light bulbs come with different levels of light output, often described in terms of the equivalent wattage for an incandescent bulb. Which, if any, of the following kinds of LED light bulbs will you consider purchasing?

Base: Total Respondents

[illegible]

	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I won't ever purchase an LED light bulb for my h	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 10

Q11. This question is testing your likelihood to pay attention while taking this survey. Please select 'Very likely' from the list below.

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 2002</b>	<b>B 122</b>	<b>C 433</b>	<b>D 593</b>	<b>E 387</b>	<b>F 467</b>	<b>G 1102</b>	<b>H 893</b>	<b>I 7</b>	<b>J 404</b>	<b>K 399</b>	<b>L 400</b>	<b>M 399</b>	<b>N 400</b>	<b>O 210</b>	<b>P 1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
5 - Very likely (5)	2002 100.0%	122 100.0%	433 100.0%	593 100.0%	387 100.0%	467 100.0%	1102 100.0%	893 100.0%	7 100.0%	404 100.0%	399 100.0%	400 100.0%	399 100.0%	400 100.0%	210 100.0%	1792 100.0%
4 - Somewhat likely (4)	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
3 - Neither likely nor unlikely (3)	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
2 - Not likely (2)	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
1 - Not at all likely (1)	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
Mean	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Std. Err.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 11

xGroup. Stores the Group that will be asked thru out the survey.

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 2002</b>	<b>B 122</b>	<b>C 433</b>	<b>D 593</b>	<b>E 387</b>	<b>F 467</b>	<b>G 1102</b>	<b>H 893</b>	<b>I 7</b>	<b>J 404</b>	<b>K 399</b>	<b>L 400</b>	<b>M 399</b>	<b>N 400</b>	<b>O 210</b>	<b>P 1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
TEST 1	404 20.2%	31 25.4%	78 18.0%	119 20.1%	76 19.6%	100 21.4%	198 18.0%	203 22.7%	3 42.9%	404 100.0%	0 -	0 -	0 -	0 -	40 19.0%	364 20.3%
								<b>G</b>		<b>KLMN</b>						

TEST 2	399 19.9%	22 18.0%	97 22.4%	120 20.2%	80 20.7%	80 17.1%	224 20.3%	173 19.4%	2 28.6%	0 -	399 100.0%	0 -	0 -	0 -	41 19.5%	358 20.0%
			F								JLMN					
TEST 3	400 20.0%	32 26.2%	94 21.7%	104 17.5%	78 20.2%	92 19.7%	222 20.1%	178 19.9%	0 -	0 -	0 -	400 100.0%	0 -	0 -	51 24.3%	349 19.5%
		D										JKMN				
TEST 4	399 19.9%	20 16.4%	86 19.9%	118 19.9%	78 20.2%	97 20.8%	239 21.7%	160 17.9%	0 -	0 -	0 -	0 -	399 100.0%	0 -	47 22.4%	352 19.6%
						H							JKLN			
CONTROL	400 20.0%	17 13.9%	78 18.0%	132 22.3%	75 19.4%	98 21.0%	219 19.9%	179 20.0%	2 28.6%	0 -	0 -	0 -	0 -	400 100.0%	31 14.8%	369 20.6%
				B										JKLM		O

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

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Table 12

Q14. Were you able to view the images clearly?

Base: Respondents who consider '60 watt equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Total	1788	107	380	548	353	400	977	805	6	352	353	356	359	368	178	1610
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Yes	1788	107	380	548	353	400	977	805	6	352	353	356	359	368	178	1610
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
No	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Not sure or don't know	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 13

Q15. TEST 1 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 1 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Total	352	27	65	108	65	87	173	176	3	352	0	0	0	0	35	317
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	100%
10 - Extremely Likely (10)	48	4	12	16	10	6	19	29	0	48	0	0	0	0	3	45
	13.6%	14.8%	18.5%	14.8%	15.4%	6.9%	11.0%	16.5%	-	13.6%	-	-	-	-	8.6%	14.2%
			F													
9 (9)	49	2	8	16	10	13	28	21	0	49	0	0	0	0	7	42
	13.9%	7.4%	12.3%	14.8%	15.4%	14.9%	16.2%	11.9%	-	13.9%	-	-	-	-	20.0%	13.2%

8 (8)	76 21.6%	7 25.9%	24 36.9%	19 17.6%	11 16.9%	15 17.2%	34 19.7%	41 23.3%	1 33.3%	76 21.6%	0 -	0 -	0 -	0 -	7 20.0%	69 21.8%
7 (7)	63 17.9%	6 22.2%	DEF 9 13.8%	20 18.5%	14 21.5%	14 16.1%	26 15.0%	37 21.0%	0 -	63 17.9%	0 -	0 -	0 -	0 -	5 14.3%	58 18.3%
6 (6)	25 7.1%	5 18.5%	1 1.5%	11 10.2%	4 6.2%	4 4.6%	14 8.1%	10 5.7%	1 33.3%	25 7.1%	0 -	0 -	0 -	0 -	1 2.9%	24 7.6%
5 (5)	34 9.7%	CF 1 3.7%	7 10.8%	C 8 7.4%	4 6.2%	14 16.1%	21 12.1%	13 7.4%	0 -	34 9.7%	0 -	0 -	0 -	0 -	5 14.3%	29 9.1%
4 (4)	16 4.5%	1 3.7%	0 -	6 5.6%	1 1.5%	8 9.2%	6 3.5%	10 5.7%	0 -	16 4.5%	0 -	0 -	0 -	0 -	2 5.7%	14 4.4%
3 (3)	13 3.7%	0 -	1 1.5%	4 3.7%	5 7.7%	3 3.4%	10 5.8%	2 1.1%	1 33.3%	13 3.7%	0 -	0 -	0 -	0 -	2 5.7%	11 3.5%
2 (2)	12 3.4%	1 3.7%	1 1.5%	4 3.7%	3 4.6%	3 3.4%	7 4.0%	5 2.8%	0 -	12 3.4%	0 -	0 -	0 -	0 -	0 -	12 3.8%
1 - Extremely Unlikely (1)	7 2.0%	0 -	1 1.5%	1 0.9%	2 3.1%	3 3.4%	4 2.3%	3 1.7%	0 -	7 2.0%	0 -	0 -	0 -	0 -	2 5.7%	5 1.6%
Not sure or don't know	9 2.6%	0 -	1 1.5%	3 2.8%	1 1.5%	4 4.6%	4 2.3%	5 2.8%	0 -	9 2.6%	0 -	0 -	0 -	0 -	1 2.9%	8 2.5%
Mean	7.07	7.3	7.72	7.11	6.98	6.49	6.85	7.31	5.67	7.07	0	0	0	0	6.79	7.1
Std. Err.	0.12	0.36	F 0.24	0.22	0.31	0.26	0.18	0.16	1.45	0.12	0	0	0	0	0.43	0.13

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 14

Q15. TEST 2 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?  
Base: TEST 2 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<b>Total</b>	<b>353</b>	<b>19</b>	<b>85</b>	<b>112</b>	<b>74</b>	<b>63</b>	<b>187</b>	<b>164</b>	<b>2</b>	<b>0</b>	<b>353</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>317</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	100%	-	-	-	100%	100%
10 - Extremely Likely (10)	34 9.6%	2 10.5%	12 14.1%	10 8.9%	5 6.8%	5 7.9%	15 8.0%	19 11.6%	0 -	0 -	34 9.6%	0 -	0 -	0 -	6 16.7%	28 8.8%
9 (9)	67 19.0%	5 26.3%	20 23.5%	17 15.2%	16 21.6%	9 14.3%	33 17.6%	34 20.7%	0 -	0 -	67 19.0%	0 -	0 -	0 -	6 16.7%	61 19.2%
8 (8)	77 21.8%	7 36.8%	17 20.0%	27 24.1%	11 14.9%	15 23.8%	39 20.9%	37 22.6%	1 50.0%	0 -	77 21.8%	0 -	0 -	0 -	6 16.7%	71 22.4%
7 (7)	60 17.0%	E 1 5.3%	15 17.6%	19 17.0%	12 16.2%	13 20.6%	35 18.7%	24 14.6%	1 50.0%	0 -	60 17.0%	0 -	0 -	0 -	7 19.4%	53 16.7%
6 (6)	38	3	8	11	11	5	21	17	0	0	38	0	0	0	5	33

	10.8%	15.8%	9.4%	9.8%	14.9%	7.9%	11.2%	10.4%	-	-	10.8%	-	-	-	13.9%	10.4%
5 (5)	20	0	4	7	5	4	10	10	0	0	20	0	0	0	1	19
	5.7%	-	4.7%	6.3%	6.8%	6.3%	5.3%	6.1%	-	-	5.7%	-	-	-	2.8%	6.0%
4 (4)	20	1	6	9	1	3	9	11	0	0	20	0	0	0	1	19
	5.7%	5.3%	7.1%	8.0%	1.4%	4.8%	4.8%	6.7%	-	-	5.7%	-	-	-	2.8%	6.0%
3 (3)	13	0	1	E	4	4	11	2	0	0	13	0	0	0	1	12
	3.7%	-	1.2%	3.6%	5.4%	6.3%	5.9%	1.2%	-	-	3.7%	-	-	-	2.8%	3.8%
2 (2)	8	0	2	3	1	2	H	2	0	0	8	0	0	0	2	6
	2.3%	-	2.4%	2.7%	1.4%	3.2%	3.2%	1.2%	-	-	2.3%	-	-	-	5.6%	1.9%
1 - Extremely Unlikely (1)	7	0	0	3	3	1	3	4	0	0	7	0	0	0	1	6
	2.0%	-	-	2.7%	4.1%	1.6%	1.6%	2.4%	-	-	2.0%	-	-	-	2.8%	1.9%
Not sure or don't know	9	0	0	2	5	2	5	4	0	0	9	0	0	0	0	9
	2.5%	-	-	1.8%	6.8%	3.2%	2.7%	2.4%	-	-	2.5%	-	-	-	-	2.8%
Mean	7.12	7.89	7.53	6.91	C	6.9	6.95	7.31	7.5	0	7.12	0	0	0	7.17	7.11
Std. Err.	0.12	0.35	D	0.21	0.21	0.28	0.28	0.16	0.17	0.5	0.12	0	0	0	0.4	0.12

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 15

Q15. TEST 3 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 3 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
Total	A 356	B 29	C 87	D 92	E 71	F 77	G 200	H 156	I 0	J 0	K 0	L 356	M 0	N 0	O 44	P 312
10 - Extremely Likely (10)	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	100%	-	-	100%	100%
	55	4	16	14	10	11	28	27	0	0	0	55	0	0	4	51
	15.4%	13.8%	18.4%	15.2%	14.1%	14.3%	14.0%	17.3%	-	-	-	15.4%	-	-	9.1%	16.3%
9 (9)	56	7	16	14	7	12	30	26	0	0	0	56	0	0	9	47
	15.7%	24.1%	18.4%	15.2%	9.9%	15.6%	15.0%	16.7%	-	-	-	15.7%	-	-	20.5%	15.1%
8 (8)	65	7	22	18	10	8	29	36	0	0	0	65	0	0	8	57
	18.3%	24.1%	25.3%	19.6%	14.1%	10.4%	14.5%	23.1%	-	-	-	18.3%	-	-	18.2%	18.3%
7 (7)	55	5	16	9	15	10	33	22	0	0	0	55	0	0	11	44
	15.4%	17.2%	18.4%	9.8%	21.1%	13.0%	16.5%	14.1%	-	-	-	15.4%	-	-	25.0%	14.1%
6 (6)	38	3	6	7	11	11	24	14	0	0	0	38	0	0	5	33
	10.7%	10.3%	6.9%	7.6%	15.5%	14.3%	12.0%	9.0%	-	-	-	10.7%	-	-	11.4%	10.6%
5 (5)	31	3	5	8	8	7	17	14	0	0	0	31	0	0	2	29
	8.7%	10.3%	5.7%	8.7%	11.3%	9.1%	8.5%	9.0%	-	-	-	8.7%	-	-	4.5%	9.3%
4 (4)	19	0	3	7	4	5	15	4	0	0	0	19	0	0	3	16
	5.3%	-	3.4%	7.6%	5.6%	6.5%	7.5%	2.6%	-	-	-	5.3%	-	-	6.8%	5.1%

3 (3)	14 3.9%	0 -	3 3.4%	5 5.4%	4 5.6%	2 2.6%	9 4.5%	5 3.2%	0 -	0 -	0 -	14 3.9%	0 -	0 -	0 -	14 4.5%
2 (2)	10 2.8%	0 -	0 -	5 5.4%	0 -	5 6.5%	6 3.0%	4 2.6%	0 -	0 -	0 -	10 2.8%	0 -	0 -	2 4.5%	8 2.6%
1 - Extremely Unlikely (1)	5 1.4%	0 -	0 -	3 3.3%	0 -	2 2.6%	4 2.0%	1 0.6%	0 -	0 -	0 -	5 1.4%	0 -	0 -	0 -	5 1.6%
Not sure or don't know	8 2.2%	0 -	0 -	2 2.2%	2 2.8%	4 5.2%	5 2.5%	3 1.9%	0 -	0 -	0 -	8 2.2%	0 -	0 -	0 -	8 2.6%
Mean	7.14	7.83	7.75	6.79	6.99	C	6.9	7.45	0	0	0	7.14	0	0	7.23	7.13
Std. Err.	0.12	DEF	DEF	0.28	0.24	0.3	0.17	G	0	0	0	0.12	0	0	0.3	0.13

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 16

Q15. TEST 4 - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 4 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<b>Total</b>	<b>359</b>	<b>18</b>	<b>73</b>	<b>110</b>	<b>72</b>	<b>86</b>	<b>217</b>	<b>142</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>359</b>	<b>0</b>	<b>38</b>	<b>321</b>
	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	-	100%	100%
10 - Extremely Likely (10)	45 12.5%	2 11.1%	14 19.2%	14 12.7%	6 8.3%	9 10.5%	22 10.1%	23 16.2%	0 -	0 -	0 -	0 -	45 12.5%	0 -	5 13.2%	40 12.5%
9 (9)	58 16.2%	6 33.3%	12 16.4%	19 17.3%	12 16.7%	9 10.5%	34 15.7%	24 16.9%	0 -	0 -	0 -	0 -	58 16.2%	0 -	8 21.1%	50 15.6%
8 (8)	81 22.6%	F 7 38.9%	15 20.5%	26 23.6%	8 11.1%	25 29.1%	35 16.1%	46 32.4%	0 -	0 -	0 -	0 -	81 22.6%	0 -	6 15.8%	75 23.4%
7 (7)	52 14.5%	E 2 11.1%	9 12.3%	15 13.6%	12 16.7%	14 16.3%	34 15.7%	18 12.7%	0 -	0 -	0 -	0 -	52 14.5%	0 -	6 15.8%	46 14.3%
6 (6)	30 8.4%	1 5.6%	3 4.1%	8 7.3%	8 11.1%	10 11.6%	22 10.1%	8 5.6%	0 -	0 -	0 -	0 -	30 8.4%	0 -	9 23.7%	21 6.5%
5 (5)	33 9.2%	0 -	8 11.0%	14 12.7%	6 8.3%	5 5.8%	23 10.6%	10 7.0%	0 -	0 -	0 -	0 -	33 9.2%	0 -	2 5.3%	31 9.7%
4 (4)	13 3.6%	0 -	4 5.5%	1 0.9%	5 6.9%	3 3.5%	9 4.1%	4 2.8%	0 -	0 -	0 -	0 -	13 3.6%	0 -	0 -	13 4.0%
3 (3)	15 4.2%	0 -	2 2.7%	5 4.5%	4 5.6%	4 4.7%	13 6.0%	2 1.4%	0 -	0 -	0 -	0 -	15 4.2%	0 -	0 -	15 4.7%
2 (2)	15 4.2%	0 -	4 5.5%	4 3.6%	3 4.2%	4 4.7%	H 11 5.1%	4 2.8%	0 -	0 -	0 -	0 -	15 4.2%	0 -	1 2.6%	14 4.4%
1 - Extremely Unlikely (1)	5 1.4%	0 -	1 1.4%	2 1.8%	1 1.4%	1 1.2%	3 1.4%	2 1.4%	0 -	0 -	0 -	0 -	5 1.4%	0 -	0 -	5 1.6%



Not sure or don't know	12 3.3%	0 -	1 1.4%	2 1.8%	7 9.7%	2 2.3%	11 5.1%	1 0.7%	0 -	0 -	0 -	0 -	12 3.3%	0 -	1 2.6%	11 3.4%
Mean	7.09	8.33 DEF	7.22	7.14	CDF 6.66	6.99	H 6.75	7.59 G	0	0	0	0	7.09	0	7.51	7.04
Std. Err.	0.12	0.24	0.29	0.22	0.29	0.24	0.16	0.17	0	0	0	0	0.12	0	0.29	0.13

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 17

Q15. CONTROL - 60 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: CONTROL Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 368</b>	<b>B 14</b>	<b>C 70</b>	<b>D 126</b>	<b>E 71</b>	<b>F 87</b>	<b>G 200</b>	<b>H 167</b>	<b>I 1</b>	<b>J 0</b>	<b>K 0</b>	<b>L 0</b>	<b>M 0</b>	<b>N 368</b>	<b>O 25</b>	<b>P 343</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	100%	100%
10 - Extremely Likely (10)	53 14.4%	1 7.1%	14 20.0%	25 19.8%	5 7.0%	8 9.2%	22 11.0%	31 18.6%	0 -	0 -	0 -	0 -	0 -	53 14.4%	2 8.0%	51 14.9%
9 (9)	56 15.2%	3 21.4%	11 15.7%	14 11.1%	14 19.7%	14 16.1%	36 18.0%	19 11.4%	1 100.0%	0 -	0 -	0 -	0 -	56 15.2%	4 16.0%	52 15.2%
8 (8)	70 19.0%	5 35.7%	17 24.3%	24 19.0%	7 9.9%	17 19.5%	35 17.5%	35 21.0%	0 -	0 -	0 -	0 -	0 -	70 19.0%	10 40.0%	60 17.5%
7 (7)	57 15.5%	3 21.4%	9 12.9%	20 15.9%	11 15.5%	14 16.1%	31 15.5%	26 15.6%	0 -	0 -	0 -	0 -	0 -	57 15.5%	3 12.0%	54 15.7%
6 (6)	46 12.5%	1 7.1%	10 14.3%	12 9.5%	13 18.3%	10 11.5%	20 10.0%	26 15.6%	0 -	0 -	0 -	0 -	0 -	46 12.5%	1 4.0%	45 13.1%
5 (5)	27 7.3%	1 7.1%	3 4.3%	6 4.8%	6 8.5%	11 12.6%	19 9.5%	8 4.8%	0 -	0 -	0 -	0 -	0 -	27 7.3%	2 8.0%	25 7.3%
4 (4)	22 6.0%	0 -	3 4.3%	10 7.9%	6 8.5%	3 3.4%	14 7.0%	8 4.8%	0 -	0 -	0 -	0 -	0 -	22 6.0%	1 4.0%	21 6.1%
3 (3)	15 4.1%	0 -	1 1.4%	6 4.8%	3 4.2%	5 5.7%	11 5.5%	4 2.4%	0 -	0 -	0 -	0 -	0 -	15 4.1%	2 8.0%	13 3.8%
2 (2)	8 2.2%	0 -	1 1.4%	3 2.4%	3 4.2%	1 1.1%	5 2.5%	3 1.8%	0 -	0 -	0 -	0 -	0 -	8 2.2%	0 -	8 2.3%
1 - Extremely Unlikely (1)	5 1.4%	0 -	0 -	3 2.4%	0 -	2 2.3%	4 2.0%	1 0.6%	0 -	0 -	0 -	0 -	0 -	5 1.4%	0 -	5 1.5%
Not sure or don't know	9 2.4%	0 -	1 1.4%	3 2.4%	3 4.2%	2 2.3%	3 1.5%	6 3.6%	0 -	0 -	0 -	0 -	0 -	9 2.4%	0 -	9 2.6%
Mean	7.13	7.79	7.68 EF	7.13	6.71	6.89	6.9	7.39 G	9	0	0	0	0	7.13	7.32	7.11
Std. Err.	0.12	0.35	0.23	0.22	0.26	0.24	0.16	0.16	0	0	0	0	0	0.12	0.39	0.12

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P

Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 18

Q16. Were you able to view the images clearly?

Base: Respondents who consider '100 watt equivalent LED light bulb' for purchasing

[illegible]

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 19

Q17. TEST 1 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 1 Respondents consider '100 WATT equivalent LED light bulb' for purchasing

[illegible]

4 (4)	14 5.3%	1 5.9%	1 2.0%	4 5.4%	2 3.7%	6 8.8%	9 6.5%	5 4.0%	0 -	14 5.3%	0 -	0 -	0 -	0 -	2 6.9%	12 5.1%
3 (3)	12 4.6%	0 -	2 4.0%	3 4.1%	5 9.3%	2 2.9%	8 5.8%	4 3.2%	0 -	12 4.6%	0 -	0 -	0 -	0 -	2 6.9%	10 4.3%
2 (2)	9 3.4%	2 11.8%	0 -	2 2.7%	0 -	5 7.4%	6 4.3%	2 1.6%	1 100.0%	9 3.4%	0 -	0 -	0 -	0 -	0 -	9 3.8%
1 - Extremely Unlikely (1)	19 7.2%	CE 0 -	0 -	7 9.5%	7 13.0%	5 7.4%	16 11.6%	3 2.4%	0 -	19 7.2%	0 -	0 -	0 -	0 -	3 10.3%	16 6.8%
Not sure or don't know	9 3.4%	0 -	0 -	3 4.1%	1 1.9%	5 7.4%	8 5.8%	1 0.8%	0 -	9 3.4%	0 -	0 -	0 -	0 -	1 3.4%	8 3.4%
Mean	6.69	7.24	8.06	6.62	6.25	5.89	6.09	7.35	2	6.69	0	0	0	0	6.14	6.75
Std. Err.	0.17	0.59	0.24	0.33	0.4	0.32	0.25	0.2	0	0.17	0	0	0	0	0.51	0.18

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 20

Q17. TEST 2 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 2 Respondents consider '100 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 267</b>	<b>B 17</b>	<b>C 60</b>	<b>D 81</b>	<b>E 54</b>	<b>F 55</b>	<b>G 167</b>	<b>H 100</b>	<b>I 0</b>	<b>J 0</b>	<b>K 267</b>	<b>L 0</b>	<b>M 0</b>	<b>N 0</b>	<b>O 26</b>	<b>P 241</b>
	100%	100%	100%	100%	100%	100%	100%	100%	-	-	100%	-	-	-	100%	100%
10 - Extremely Likely (10)	33 12.4%	3 17.6%	12 20.0%	11 13.6%	4 7.4%	3 5.5%	16 9.6%	17 17.0%	0 -	0 -	33 12.4%	0 -	0 -	0 -	5 19.2%	28 11.6%
9 (9)	31 11.6%	3 17.6%	12 20.0%	7 8.6%	4 7.4%	5 9.1%	16 9.6%	15 15.0%	0 -	0 -	31 11.6%	0 -	0 -	0 -	3 11.5%	28 11.6%
8 (8)	49 18.4%	3 17.6%	11 18.3%	13 16.0%	11 20.4%	11 20.0%	29 17.4%	20 20.0%	0 -	0 -	49 18.4%	0 -	0 -	0 -	4 15.4%	45 18.7%
7 (7)	38 14.2%	4 23.5%	9 15.0%	14 17.3%	6 11.1%	5 9.1%	26 15.6%	12 12.0%	0 -	0 -	38 14.2%	0 -	0 -	0 -	1 3.8%	37 15.4%
6 (6)	30 11.2%	3 17.6%	8 13.3%	5 6.2%	6 11.1%	8 14.5%	18 10.8%	12 12.0%	0 -	0 -	30 11.2%	0 -	0 -	0 -	6 23.1%	24 10.0%
5 (5)	29 10.9%	0 -	4 6.7%	11 13.6%	5 9.3%	9 16.4%	23 13.8%	6 6.0%	0 -	0 -	29 10.9%	0 -	0 -	0 -	3 11.5%	26 10.8%
4 (4)	14 5.2%	0 -	2 3.3%	5 6.2%	4 7.4%	3 5.5%	9 5.4%	5 5.0%	0 -	0 -	14 5.2%	0 -	0 -	0 -	0 -	14 5.8%
3 (3)	14 5.2%	0 -	1 1.7%	4 4.9%	6 11.1%	3 5.5%	11 6.6%	3 3.0%	0 -	0 -	14 5.2%	0 -	0 -	0 -	2 7.7%	12 5.0%
2 (2)	11 4.1%	0 -	0 -	5 6.2%	3 5.6%	3 5.5%	9 5.4%	2 2.0%	0 -	0 -	11 4.1%	0 -	0 -	0 -	1 3.8%	10 4.1%

1 - Extremely Unlikely (1)	9 3.4%	1 5.9%	1 1.7%	4 4.9%	1 1.9%	2 3.6%	5 3.0%	4 4.0%	0 -	0 -	9 3.4%	0 -	0 -	0 -	0 -	9 3.7%
Not sure or don't know	9 3.4%	0 -	0 -	2 2.5%	4 7.4%	3 5.5%	5 3.0%	4 4.0%	0 -	0 -	9 3.4%	0 -	0 -	0 -	1 3.8%	8 3.3%
Mean	6.67	7.53	7.65	6.41	C 6.16	6.15	6.38	7.17	0	0	6.67	0	0	0	7	6.64
Std. Err.	0.15	EF 0.53	DEF 0.26	0.3	0.35	0.33	0.19	G 0.25	0	0	0.15	0	0	0	0.48	0.16

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 21

Q17. TEST 3 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 3 Respondents consider '100 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 251</b>	<b>B 11</b>	<b>C 57</b>	<b>D 74</b>	<b>E 53</b>	<b>F 56</b>	<b>G 146</b>	<b>H 105</b>	<b>I 0</b>	<b>J 0</b>	<b>K 0</b>	<b>L 251</b>	<b>M 0</b>	<b>N 0</b>	<b>O 35</b>	<b>P 216</b>
	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	100%	-	-	100%	100%
10 - Extremely Likely (10)	37 14.7%	3 27.3%	10 17.5%	13 17.6%	6 11.3%	5 8.9%	19 13.0%	18 17.1%	0 -	0 -	0 -	37 14.7%	0 -	0 -	5 14.3%	32 14.8%
9 (9)	38 15.1%	2 18.2%	9 15.8%	10 13.5%	8 15.1%	9 16.1%	18 12.3%	20 19.0%	0 -	0 -	0 -	38 15.1%	0 -	0 -	5 14.3%	33 15.3%
8 (8)	30 12.0%	2 18.2%	14 24.6%	6 8.1%	5 9.4%	3 5.4%	17 11.6%	13 12.4%	0 -	0 -	0 -	30 12.0%	0 -	0 -	1 2.9%	29 13.4%
7 (7)	33 13.1%	2 18.2%	7 12.3%	7 9.5%	8 15.1%	9 16.1%	21 14.4%	12 11.4%	0 -	0 -	0 -	33 13.1%	0 -	0 -	6 17.1%	27 12.5%
6 (6)	20 8.0%	2 18.2%	6 10.5%	4 5.4%	6 11.3%	2 3.6%	15 10.3%	5 4.8%	0 -	0 -	0 -	20 8.0%	0 -	0 -	5 14.3%	15 6.9%
5 (5)	17 6.8%	0 -	4 7.0%	6 8.1%	4 7.5%	3 5.4%	10 6.8%	7 6.7%	0 -	0 -	0 -	17 6.8%	0 -	0 -	3 8.6%	14 6.5%
4 (4)	17 6.8%	0 -	1 1.8%	8 10.8%	6 11.3%	2 3.6%	9 6.2%	8 7.6%	0 -	0 -	0 -	17 6.8%	0 -	0 -	1 2.9%	16 7.4%
3 (3)	19 7.6%	0 -	2 3.5%	C 8 10.8%	C 2 3.8%	7 12.5%	10 6.8%	9 8.6%	0 -	0 -	0 -	19 7.6%	0 -	0 -	4 11.4%	15 6.9%
2 (2)	16 6.4%	0 -	2 3.5%	5 6.8%	1 1.9%	8 14.3%	12 8.2%	4 3.8%	0 -	0 -	0 -	16 6.4%	0 -	0 -	2 5.7%	14 6.5%
1 - Extremely Unlikely (1)	15 6.0%	0 -	2 3.5%	6 8.1%	1 1.9%	6 10.7%	11 7.5%	4 3.8%	0 -	0 -	0 -	15 6.0%	0 -	0 -	2 5.7%	13 6.0%
Not sure or don't know	9 3.6%	0 -	0 -	1 1.4%	6 11.3%	2 3.6%	4 2.7%	5 4.8%	0 -	0 -	0 -	9 3.6%	0 -	0 -	1 2.9%	8 3.7%
Mean	6.45	8.18	7.26	6.07	CD 6.74	5.48	6.17	6.84	0	0	0	6.45	0	0	6.24	6.48

Std. Err.	0.18	DF	DF		F											
		0.46	0.32	0.36	0.34	0.43	0.24	0.27	0	0	0	0.18	0	0	0.48	0.2

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 22

Q17. TEST 4 - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: TEST 4 Respondents consider '100 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A</b> <b>255</b>	<b>B</b> <b>14</b>	<b>C</b> <b>54</b>	<b>D</b> <b>71</b>	<b>E</b> <b>51</b>	<b>F</b> <b>65</b>	<b>G</b> <b>158</b>	<b>H</b> <b>97</b>	<b>I</b> <b>0</b>	<b>J</b> <b>0</b>	<b>K</b> <b>0</b>	<b>L</b> <b>0</b>	<b>M</b> <b>255</b>	<b>N</b> <b>0</b>	<b>O</b> <b>35</b>	<b>P</b> <b>220</b>
	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	-	100%	100%
10 - Extremely Likely (10)	27 10.6%	1 7.1%	11 20.4%	4 5.6%	7 13.7%	4 6.2%	18 11.4%	9 9.3%	0 -	0 -	0 -	0 -	27 10.6%	0 -	4 11.4%	23 10.5%
			DF													
9 (9)	41 16.1%	5 35.7%	12 22.2%	14 19.7%	7 13.7%	3 4.6%	28 17.7%	13 13.4%	0 -	0 -	0 -	0 -	41 16.1%	0 -	9 25.7%	32 14.5%
		F	F	F												
8 (8)	48 18.8%	2 14.3%	6 11.1%	15 21.1%	6 11.8%	19 29.2%	25 15.8%	23 23.7%	0 -	0 -	0 -	0 -	48 18.8%	0 -	6 17.1%	42 19.1%
						CE										
7 (7)	40 15.7%	3 21.4%	9 16.7%	11 15.5%	8 15.7%	9 13.8%	17 10.8%	23 23.7%	0 -	0 -	0 -	0 -	40 15.7%	0 -	3 8.6%	37 16.8%
								G								
6 (6)	26 10.2%	3 21.4%	5 9.3%	8 11.3%	5 9.8%	5 7.7%	14 8.9%	12 12.4%	0 -	0 -	0 -	0 -	26 10.2%	0 -	3 8.6%	23 10.5%
5 (5)	21 8.2%	0 -	4 7.4%	4 5.6%	7 13.7%	6 9.2%	17 10.8%	4 4.1%	0 -	0 -	0 -	0 -	21 8.2%	0 -	3 8.6%	18 8.2%
4 (4)	17 6.7%	0 -	1 1.9%	6 8.5%	3 5.9%	7 10.8%	9 5.7%	8 8.2%	0 -	0 -	0 -	0 -	17 6.7%	0 -	2 5.7%	15 6.8%
3 (3)	13 5.1%	0 -	4 7.4%	1 1.4%	5 9.8%	3 4.6%	11 7.0%	2 2.1%	0 -	0 -	0 -	0 -	13 5.1%	0 -	2 5.7%	11 5.0%
					D											
2 (2)	8 3.1%	0 -	0 -	3 4.2%	1 2.0%	4 6.2%	7 4.4%	1 1.0%	0 -	0 -	0 -	0 -	8 3.1%	0 -	1 2.9%	7 3.2%
1 - Extremely Unlikely (1)	8 3.1%	0 -	1 1.9%	2 2.8%	1 2.0%	4 6.2%	7 4.4%	1 1.0%	0 -	0 -	0 -	0 -	8 3.1%	0 -	2 5.7%	6 2.7%
Not sure or don't know	6 2.4%	0 -	1 1.9%	3 4.2%	1 2.0%	1 1.5%	5 3.2%	1 1.0%	0 -	0 -	0 -	0 -	6 2.4%	0 -	0 -	6 2.7%
Mean	6.81	7.86	7.47	6.85	6.64	6.11	6.6	7.14	0	0	0	0	6.81	0	6.89	6.79
		F	F													
Std. Err.	0.15	0.36	0.31	0.28	0.34	0.32	0.21	0.2	0	0	0	0	0.15	0	0.45	0.16

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 23

Q17. CONTROL - 100 WATT - Based on your review of the product and its price, how likely would you be to purchase it?

Base: CONTROL Respondents consider '100 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 270</b>	<b>B 10</b>	<b>C 54</b>	<b>D 84</b>	<b>E 58</b>	<b>F 64</b>	<b>G 148</b>	<b>H 121</b>	<b>I 1</b>	<b>J 0</b>	<b>K 0</b>	<b>L 0</b>	<b>M 0</b>	<b>N 270</b>	<b>O 24</b>	<b>P 246</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	100%	100%
10 - Extremely Likely (10)	36 13.3%	3 30.0%	12 22.2%	14 16.7%	5 8.6%	2 3.1%	15 10.1%	21 17.4%	0 -	0 -	0 -	0 -	0 -	36 13.3%	3 12.5%	33 13.4%
		<b>F</b>	<b>EF</b>	<b>F</b>												
9 (9)	24 8.9%	3 30.0%	4 7.4%	9 10.7%	6 10.3%	2 3.1%	16 10.8%	8 6.6%	0 -	0 -	0 -	0 -	0 -	24 8.9%	4 16.7%	20 8.1%
		<b>CF</b>														
8 (8)	49 18.1%	1 10.0%	15 27.8%	9 10.7%	10 17.2%	14 21.9%	23 15.5%	26 21.5%	0 -	0 -	0 -	0 -	0 -	49 18.1%	3 12.5%	46 18.7%
			<b>D</b>													
7 (7)	43 15.9%	2 20.0%	8 14.8%	13 15.5%	9 15.5%	11 17.2%	21 14.2%	22 18.2%	0 -	0 -	0 -	0 -	0 -	43 15.9%	4 16.7%	39 15.9%
6 (6)	24 8.9%	1 10.0%	1 1.9%	7 8.3%	5 8.6%	10 15.6%	12 8.1%	12 9.9%	0 -	0 -	0 -	0 -	0 -	24 8.9%	2 8.3%	22 8.9%
						<b>C</b>										
5 (5)	24 8.9%	0 -	3 5.6%	9 10.7%	6 10.3%	6 9.4%	14 9.5%	10 8.3%	0 -	0 -	0 -	0 -	0 -	24 8.9%	2 8.3%	22 8.9%
4 (4)	22 8.1%	0 -	7 13.0%	6 7.1%	4 6.9%	5 7.8%	13 8.8%	8 6.6%	1 100.0%	0 -	0 -	0 -	0 -	22 8.1%	2 8.3%	20 8.1%
								<b>GH</b>								
3 (3)	18 6.7%	0 -	3 5.6%	8 9.5%	4 6.9%	3 4.7%	12 8.1%	6 5.0%	0 -	0 -	0 -	0 -	0 -	18 6.7%	3 12.5%	15 6.1%
2 (2)	12 4.4%	0 -	0 -	2 2.4%	5 8.6%	5 7.8%	11 7.4%	1 0.8%	0 -	0 -	0 -	0 -	0 -	12 4.4%	1 4.2%	11 4.5%
				<b>C</b>	<b>C</b>	<b>H</b>										
1 - Extremely Unlikely (1)	7 2.6%	0 -	0 -	4 4.8%	2 3.4%	1 1.6%	5 3.4%	2 1.7%	0 -	0 -	0 -	0 -	0 -	7 2.6%	0 -	7 2.8%
Not sure or don't know	11 4.1%	0 -	1 1.9%	3 3.6%	2 3.4%	5 7.8%	6 4.1%	5 4.1%	0 -	0 -	0 -	0 -	0 -	11 4.1%	0 -	11 4.5%
Mean	6.59	8.5	7.36	6.51	6.2	6.05	6.21	7.07	4	0	0	0	0	6.59	6.63	6.58
		<b>DEF</b>	<b>EF</b>					<b>G</b>								
Std. Err.	0.15	0.45	0.3	0.3	0.35	0.28	0.22	0.21	0	0	0	0	0	0.15	0.51	0.16

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P

Overlap formulae used.

ORD-475046-G0X8 Duff &amp; Phelps Home Depot

Banner1

Table 24

Q17x5. TEST 1 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?

Base: TEST 1 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Total	352	27	65	108	65	87	173	176	3	352	0	0	0	0	35	317
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	100%
1	12 3.4%	2 7.4%	2 3.1%	7 6.5%	1 1.5%	0 -	7 4.0%	5 2.8%	0 -	12 3.4%	0 -	0 -	0 -	0 -	1 2.9%	11 3.5%
		F		F												
2	44 12.5%	8 29.6%	9 13.8%	17 15.7%	5 7.7%	5 5.7%	22 12.7%	22 12.5%	0 -	44 12.5%	0 -	0 -	0 -	0 -	4 11.4%	40 12.6%
		EF		F												
3	21 6.0%	2 7.4%	7 10.8%	6 5.6%	1 1.5%	5 5.7%	13 7.5%	8 4.5%	0 -	21 6.0%	0 -	0 -	0 -	0 -	2 5.7%	19 6.0%
			E													
4	7 2.0%	1 3.7%	0 -	2 1.9%	3 4.6%	1 1.1%	5 2.9%	2 1.1%	0 -	7 2.0%	0 -	0 -	0 -	0 -	0 -	7 2.2%
5	41 11.6%	2 7.4%	6 9.2%	13 12.0%	7 10.8%	13 14.9%	21 12.1%	20 11.4%	0 -	41 11.6%	0 -	0 -	0 -	0 -	5 14.3%	36 11.4%
6	4 1.1%	0 -	1 1.5%	1 0.9%	0 -	2 2.3%	2 1.2%	2 1.1%	0 -	4 1.1%	0 -	0 -	0 -	0 -	0 -	4 1.3%
7	5 1.4%	0 -	0 -	3 2.8%	1 1.5%	1 1.1%	3 1.7%	2 1.1%	0 -	5 1.4%	0 -	0 -	0 -	0 -	2 5.7%	3 0.9%
															P	
8	12 3.4%	2 7.4%	2 3.1%	3 2.8%	3 4.6%	2 2.3%	5 2.9%	6 3.4%	1 33.3%	12 3.4%	0 -	0 -	0 -	0 -	0 -	12 3.8%
									GH							
9	1 0.3%	0 -	0 -	1 0.9%	0 -	0 -	0 -	1 0.6%	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%
10	61 17.3%	5 18.5%	10 15.4%	13 12.0%	17 26.2%	16 18.4%	24 13.9%	36 20.5%	1 33.3%	61 17.3%	0 -	0 -	0 -	0 -	5 14.3%	56 17.7%
					D											
11	5 1.4%	1 3.7%	0 -	2 1.9%	2 3.1%	0 -	4 2.3%	1 0.6%	0 -	5 1.4%	0 -	0 -	0 -	0 -	2 5.7%	3 0.9%
															P	
12	3 0.9%	1 3.7%	0 -	1 0.9%	0 -	1 1.1%	3 1.7%	0 -	0 -	3 0.9%	0 -	0 -	0 -	0 -	0 -	3 0.9%
15	12 3.4%	3 11.1%	2 3.1%	3 2.8%	1 1.5%	3 3.4%	5 2.9%	6 3.4%	1 33.3%	12 3.4%	0 -	0 -	0 -	0 -	0 -	12 3.8%
		E							GH							
16	1 0.3%	0 -	0 -	0 -	0 -	1 1.1%	0 -	1 0.6%	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%
17	1 0.3%	0 -	0 -	0 -	0 -	1 1.1%	1 0.6%	0 -	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%
19	1 0.3%	0 -	0 -	1 0.9%	0 -	0 -	0 -	1 0.6%	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%
20	34 9.7%	0 -	10 15.4%	10 9.3%	6 9.2%	8 9.2%	19 11.0%	15 8.5%	0 -	34 9.7%	0 -	0 -	0 -	0 -	3 8.6%	31 9.8%
			B													
22	78 22.2%	0 -	13 20.0%	21 19.4%	18 27.7%	26 29.9%	34 19.7%	44 25.0%	0 -	78 22.2%	0 -	0 -	0 -	0 -	11 31.4%	67 21.1%
			B	B	B	B										
22.7	1 0.3%	0 -	0 -	1 0.9%	0 -	0 -	1 0.6%	0 -	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%

22.8	4 1.1%	0 -	0 -	3 2.8%	0 -	1 1.1%	2 1.2%	2 1.1%	0 -	4 1.1%	0 -	0 -	0 -	0 -	0 -	4 1.3%
23	1 0.3%	0 -	1 1.5%	0 -	0 -	0 -	1 0.6%	0 -	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%
25	2 0.6%	0 -	2 3.1%	0 -	0 -	0 -	0 -	2 1.1%	0 -	2 0.6%	0 -	0 -	0 -	0 -	0 -	2 0.6%
28	1 0.3%	0 -	0 -	0 -	0 -	1 1.1%	1 0.6%	0 -	0 -	1 0.3%	0 -	0 -	0 -	0 -	0 -	1 0.3%
Mean (Including 0)	11.66	6.37	12.03	10.86	12.54	13.35	11.26	12.07	11	11.66	0	0	0	0	12.23	11.6
Std. Err.	0.42	0.92	1.04	0.79	0.92	0.83	0.61	0.6	2.08	0.42	0	0	0	0	1.39	0.45
Mean (Excluding 0)	11.66	6.37	12.03	10.86	12.54	13.35	11.26	12.07	11	11.66	0	0	0	0	12.23	11.6
Std. Err.	0.42	0.92	1.04	0.79	0.92	0.83	0.61	0.6	2.08	0.42	0	0	0	0	1.39	0.45

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
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Table 25

Q17x5. TEST 2 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?

Base: TEST 2 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A 353</b>	<b>B 19</b>	<b>C 85</b>	<b>D 112</b>	<b>E 74</b>	<b>F 63</b>	<b>G 187</b>	<b>H 164</b>	<b>I 2</b>	<b>J 0</b>	<b>K 353</b>	<b>L 0</b>	<b>M 0</b>	<b>N 0</b>	<b>O 36</b>	<b>P 317</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	100%	-	-	-	100%	100%
1	13 3.7%	2 10.5%	6 7.1%	5 4.5%	0 -	0 -	5 2.7%	8 4.9%	0 -	0 -	13 3.7%	0 -	0 -	0 -	1 2.8%	12 3.8%
		EF	EF													
2	30 8.5%	2 10.5%	12 14.1%	7 6.3%	7 9.5%	2 3.2%	6 3.2%	23 14.0%	1 50.0%	0 -	30 8.5%	0 -	0 -	0 -	8 22.2%	22 6.9%
			F					G	G						P	
3	22 6.2%	3 15.8%	6 7.1%	9 8.0%	3 4.1%	1 1.6%	10 5.3%	12 7.3%	0 -	0 -	22 6.2%	0 -	0 -	0 -	2 5.6%	20 6.3%
		F														
4	12 3.4%	3 15.8%	6 7.1%	1 0.9%	1 1.4%	1 1.6%	9 4.8%	3 1.8%	0 -	0 -	12 3.4%	0 -	0 -	0 -	1 2.8%	11 3.5%
			DEF	D												
5	40 11.3%	1 5.3%	10 11.8%	16 14.3%	8 10.8%	5 7.9%	18 9.6%	22 13.4%	0 -	0 -	40 11.3%	0 -	0 -	0 -	4 11.1%	36 11.4%
6	3 0.8%	0 -	1 1.2%	1 0.9%	0 -	1 1.6%	1 0.5%	2 1.2%	0 -	0 -	3 0.8%	0 -	0 -	0 -	0 -	3 0.9%
7	5 1.4%	0 -	0 -	2 1.8%	2 2.7%	1 1.6%	3 1.6%	2 1.2%	0 -	0 -	5 1.4%	0 -	0 -	0 -	1 2.8%	4 1.3%
8	4 1.1%	0 -	3 3.5%	0 -	1 1.4%	0 -	2 1.1%	2 1.2%	0 -	0 -	4 1.1%	0 -	0 -	0 -	0 -	4 1.3%
			D													
9	1 0.3%	0 -	0 -	1 0.9%	0 -	0 -	1 0.5%	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	0 -	1 0.3%



10	53 15.0%	4 21.1%	7 8.2%	18 16.1%	14 18.9%	10 15.9%	29 15.5%	24 14.6%	0 -	0 -	53 15.0%	0 -	0 -	0 -	2 5.6%	51 16.1%
11	2 0.6%	0 -	0 -	0 -	1 1.4%	1 1.6%	0 -	2 1.2%	0 -	0 -	2 0.6%	0 -	0 -	0 -	1 2.8%	1 0.3%
12	6 1.7%	0 -	1 1.2%	1 0.9%	1 1.4%	3 4.8%	4 2.1%	2 1.2%	0 -	0 -	6 1.7%	0 -	0 -	0 -	1 2.8%	5 1.6%
15	14 4.0%	1 5.3%	2 2.4%	6 5.4%	4 5.4%	1 1.6%	7 3.7%	7 4.3%	0 -	0 -	14 4.0%	0 -	0 -	0 -	0 -	14 4.4%
18	2 0.6%	0 -	2 2.4%	0 -	0 -	0 -	1 0.5%	1 0.6%	0 -	0 -	2 0.6%	0 -	0 -	0 -	0 -	2 0.6%
20	34 9.6%	1 5.3%	5 5.9%	14 12.5%	6 8.1%	8 12.7%	28 15.0%	6 3.7%	0 -	0 -	34 9.6%	0 -	0 -	0 -	3 8.3%	31 9.8%
22	102 28.9%	2 10.5%	22 25.9%	27 24.1%	25 33.8%	26 41.3%	55 29.4%	46 28.0%	1 50.0%	0 -	102 28.9%	0 -	0 -	0 -	10 27.8%	92 29.0%
22.7	1 0.3%	0 -	0 -	0 -	1 1.4%	0 -	1 0.5%	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 2.8%	0 -
23	4 1.1%	0 -	1 1.2%	3 2.7%	0 -	0 -	4 2.1%	0 -	0 -	0 -	4 1.1%	0 -	0 -	0 -	1 2.8%	3 0.9%
25	4 1.1%	0 -	1 1.2%	1 0.9%	0 -	2 3.2%	2 1.1%	2 1.2%	0 -	0 -	4 1.1%	0 -	0 -	0 -	0 -	4 1.3%
34	1 0.3%	0 -	0 -	0 -	0 -	1 1.6%	1 0.5%	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	0 -	1 0.3%
Mean (Including 0)	12.82	7.95	10.96	12.58	13.58	16.3	14.2	11.25	12	0	12.82	0	0	0	11.74	12.94
Std. Err.	0.44	1.62	0.93	0.76	0.9	0.94	0.58	0.64	10	0	0.44	0	0	0	1.49	0.46
Mean (Excluding 0)	12.82	7.95	10.96	12.58	13.58	16.3	14.2	11.25	12	0	12.82	0	0	0	11.74	12.94
Std. Err.	0.44	1.62	0.93	0.76	0.9	0.94	0.58	0.64	10	0	0.44	0	0	0	1.49	0.46

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 26

Q17x5. TEST 3 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?

Base: TEST 3 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
Total	A 356	B 29	C 87	D 92	E 71	F 77	G 200	H 156	I 0	J 0	K 0	L 356	M 0	N 0	O 44	P 312
	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	100%	-	-	100%	100%
1	18 5.1%	2 6.9%	6 6.9%	5 5.4%	4 5.6%	1 1.3%	9 4.5%	9 5.8%	0 -	0 -	0 -	18 5.1%	0 -	0 -	1 2.3%	17 5.4%
1.5	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1

	0.3%	-	-	-	1.4%	-	0.5%	-	-	-	-	0.3%	-	-	-	0.3%
2	38 10.7%	8 27.6%	12 13.8%	10 10.9%	4 5.6%	4 5.2%	17 8.5%	21 13.5%	0 -	0 -	0 -	38 10.7%	0 -	0 -	5 11.4%	33 10.6%
		DEF														
3	18 5.1%	1 3.4%	5 5.7%	4 4.3%	5 7.0%	3 3.9%	7 3.5%	11 7.1%	0 -	0 -	0 -	18 5.1%	0 -	0 -	2 4.5%	16 5.1%
4	10 2.8%	0 -	5 5.7%	2 2.2%	1 1.4%	2 2.6%	7 3.5%	3 1.9%	0 -	0 -	0 -	10 2.8%	0 -	0 -	1 2.3%	9 2.9%
5	36 10.1%	2 6.9%	8 9.2%	10 10.9%	10 14.1%	6 7.8%	25 12.5%	11 7.1%	0 -	0 -	0 -	36 10.1%	0 -	0 -	4 9.1%	32 10.3%
6	3 0.8%	0 -	0 -	2 2.2%	0 -	1 1.3%	2 1.0%	1 0.6%	0 -	0 -	0 -	3 0.8%	0 -	0 -	1 2.3%	2 0.6%
7	4 1.1%	0 -	1 1.1%	0 -	2 2.8%	1 1.3%	1 0.5%	3 1.9%	0 -	0 -	0 -	4 1.1%	0 -	0 -	0 -	4 1.3%
8	5 1.4%	0 -	2 2.3%	1 1.1%	0 -	2 2.6%	0 -	5 3.2%	0 -	0 -	0 -	5 1.4%	0 -	0 -	1 2.3%	4 1.3%
								G								
9	1 0.3%	0 -	1 1.1%	0 -	0 -	0 -	1 0.5%	0 -	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 0.3%
10	60 16.9%	3 10.3%	18 20.7%	11 12.0%	9 12.7%	19 24.7%	33 16.5%	27 17.3%	0 -	0 -	0 -	60 16.9%	0 -	0 -	8 18.2%	52 16.7%
						D										
12	2 0.6%	0 -	1 1.1%	0 -	1 1.4%	0 -	2 1.0%	0 -	0 -	0 -	0 -	2 0.6%	0 -	0 -	0 -	2 0.6%
13	1 0.3%	0 -	0 -	1 1.1%	0 -	0 -	0 -	1 0.6%	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 0.3%
15	18 5.1%	2 6.9%	3 3.4%	5 5.4%	4 5.6%	4 5.2%	7 3.5%	11 7.1%	0 -	0 -	0 -	18 5.1%	0 -	0 -	3 6.8%	15 4.8%
20	32 9.0%	3 10.3%	5 5.7%	15 16.3%	3 4.2%	6 7.8%	21 10.5%	11 7.1%	0 -	0 -	0 -	32 9.0%	0 -	0 -	4 9.1%	28 9.0%
				CE												
22	101 28.4%	7 24.1%	19 21.8%	25 27.2%	23 32.4%	27 35.1%	61 30.5%	40 25.6%	0 -	0 -	0 -	101 28.4%	0 -	0 -	13 29.5%	88 28.2%
22.8	1 0.3%	0 -	0 -	0 -	0 -	1 1.3%	1 0.5%	0 -	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 0.3%
23	1 0.3%	0 -	0 -	1 1.1%	0 -	0 -	0 -	1 0.6%	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 0.3%
25	3 0.8%	1 3.4%	1 1.1%	0 -	1 1.4%	0 -	3 1.5%	0 -	0 -	0 -	0 -	3 0.8%	0 -	0 -	0 -	3 1.0%
30	1 0.3%	0 -	0 -	0 -	1 1.4%	0 -	1 0.5%	0 -	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 0.3%
50	1 0.3%	0 -	0 -	0 -	1 1.4%	0 -	1 0.5%	0 -	0 -	0 -	0 -	1 0.3%	0 -	0 -	1 2.3%	0 -
															P	
55	1 0.3%	0 -	0 -	0 -	1 1.4%	0 -	0 -	1 0.6%	0 -	0 -	0 -	1 0.3%	0 -	0 -	0 -	1 0.3%

Mean (Including 0)	12.61	11.38	10.54	12.89	13.87	13.92	13.23	11.82	0	0	0	12.61	0	0	13.55	12.48
					C	C										
Std. Err.	0.46	1.68	0.85	0.86	1.28	0.86	0.61	0.7	0	0	0	0.46	0	0	1.46	0.49
Mean (Excluding 0)	12.61	11.38	10.54	12.89	13.87	13.92	13.23	11.82	0	0	0	12.61	0	0	13.55	12.48
					C	C										
Std. Err.	0.46	1.68	0.85	0.86	1.28	0.86	0.61	0.7	0	0	0	0.46	0	0	1.46	0.49

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 27

Q17x5. TEST 4 - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?

Base: TEST 4 Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
<b>Total</b>	<b>A</b> <b>359</b>	<b>B</b> <b>18</b>	<b>C</b> <b>73</b>	<b>D</b> <b>110</b>	<b>E</b> <b>72</b>	<b>F</b> <b>86</b>	<b>G</b> <b>217</b>	<b>H</b> <b>142</b>	<b>I</b> <b>0</b>	<b>J</b> <b>0</b>	<b>K</b> <b>0</b>	<b>L</b> <b>0</b>	<b>M</b> <b>359</b>	<b>N</b> <b>0</b>	<b>O</b> <b>38</b>	<b>P</b> <b>321</b>
	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	-	100%	100%
1	11 3.1%	2 11.1%	3 4.1%	1 0.9%	2 2.8%	3 3.5%	5 2.3%	6 4.2%	0 -	0 -	0 -	0 -	11 3.1%	0 -	2 5.3%	9 2.8%
		D														
2	35 9.7%	5 27.8%	9 12.3%	13 11.8%	6 8.3%	2 2.3%	23 10.6%	12 8.5%	0 -	0 -	0 -	0 -	35 9.7%	0 -	4 10.5%	31 9.7%
		EF	F	F												
3	16 4.5%	2 11.1%	8 11.0%	1 0.9%	3 4.2%	2 2.3%	13 6.0%	3 2.1%	0 -	0 -	0 -	0 -	16 4.5%	0 -	2 5.3%	14 4.4%
		D	DF													
4	7 1.9%	1 5.6%	3 4.1%	2 1.8%	1 1.4%	0 -	5 2.3%	2 1.4%	0 -	0 -	0 -	0 -	7 1.9%	0 -	0 -	7 2.2%
		F														
5	38 10.6%	0 -	7 9.6%	15 13.6%	6 8.3%	10 11.6%	24 11.1%	14 9.9%	0 -	0 -	0 -	0 -	38 10.6%	0 -	2 5.3%	36 11.2%
6	7 1.9%	0 -	1 1.4%	1 0.9%	2 2.8%	3 3.5%	5 2.3%	2 1.4%	0 -	0 -	0 -	0 -	7 1.9%	0 -	1 2.6%	6 1.9%
7	3 0.8%	0 -	0 -	2 1.8%	0 -	1 1.2%	3 1.4%	0 -	0 -	0 -	0 -	0 -	3 0.8%	0 -	0 -	3 0.9%
8	5 1.4%	0 -	2 2.7%	1 0.9%	2 2.8%	0 -	4 1.8%	1 0.7%	0 -	0 -	0 -	0 -	5 1.4%	0 -	1 2.6%	4 1.2%
10	57 15.9%	3 16.7%	10 13.7%	20 18.2%	10 13.9%	14 16.3%	29 13.4%	28 19.7%	0 -	0 -	0 -	0 -	57 15.9%	0 -	6 15.8%	51 15.9%
12	2 0.6%	0 -	0 -	0 -	1 1.4%	1 1.2%	1 0.5%	1 0.7%	0 -	0 -	0 -	0 -	2 0.6%	0 -	0 -	2 0.6%
15	14 3.9%	1 5.6%	5 6.8%	5 4.5%	1 1.4%	2 2.3%	8 3.7%	6 4.2%	0 -	0 -	0 -	0 -	14 3.9%	0 -	2 5.3%	12 3.7%
18	3 0.8%	0 -	1 1.4%	0 -	2 2.8%	0 -	3 1.4%	0 -	0 -	0 -	0 -	0 -	3 0.8%	0 -	1 2.6%	2 0.6%
20	36	1	5	11	10	9	23	13	0	0	0	0	36	0	3	33

	10.0%	5.6%	6.8%	10.0%	13.9%	10.5%	10.6%	9.2%	-	-	-	-	10.0%	-	7.9%	10.3%
20.8	1	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
	0.3%	-	1.4%	-	-	-	0.5%	-	-	-	-	-	0.3%	-	-	0.3%
22	119	3	17	38	25	36	66	53	0	0	0	0	119	0	13	106
	33.1%	16.7%	23.3%	34.5%	34.7%	41.9%	30.4%	37.3%	-	-	-	-	33.1%	-	34.2%	33.0%
						BC										
23	2	0	0	0	0	2	2	0	0	0	0	0	2	0	1	1
	0.6%	-	-	-	-	2.3%	0.9%	-	-	-	-	-	0.6%	-	2.6%	0.3%
25	2	0	0	0	1	1	2	0	0	0	0	0	2	0	0	2
	0.6%	-	-	-	1.4%	1.2%	0.9%	-	-	-	-	-	0.6%	-	-	0.6%
99	1	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
	0.3%	-	1.4%	-	-	-	-	0.7%	-	-	-	-	0.3%	-	-	0.3%
Mean (Including 0)	13.54	8.5	12.34	13.38	14.21	15.27	12.99	14.39	0	0	0	0	13.54	0	13.61	13.54
				B	B	B										
Std. Err.	0.49	1.92	1.53	0.76	0.95	0.83	0.56	0.9	0	0	0	0	0.49	0	1.35	0.53
Mean (Excluding 0)	13.54	8.5	12.34	13.38	14.21	15.27	12.99	14.39	0	0	0	0	13.54	0	13.61	13.54
				B	B	B										
Std. Err.	0.49	1.92	1.53	0.76	0.95	0.83	0.56	0.9	0	0	0	0	0.49	0	1.35	0.53

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

Table 28

Q17x5. CONTROL - 60 WATT - How long would you expect this LED light bulb to last, if it were in use in your home?

Base: CONTROL Respondents consider '60 WATT equivalent LED light bulb' for purchasing

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<b>Total</b>	<b>368</b>	<b>14</b>	<b>70</b>	<b>126</b>	<b>71</b>	<b>87</b>	<b>200</b>	<b>167</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>368</b>	<b>25</b>	<b>343</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	-	-	-	-	100%	100%	100%
1	11	2	5	2	2	0	2	9	0	0	0	0	0	11	0	11
	3.0%	14.3%	7.1%	1.6%	2.8%	-	1.0%	5.4%	-	-	-	-	-	3.0%	-	3.2%
		DF	DF					G								
2	37	4	5	13	9	6	17	20	0	0	0	0	0	37	5	32
	10.1%	28.6%	7.1%	10.3%	12.7%	6.9%	8.5%	12.0%	-	-	-	-	-	10.1%	20.0%	9.3%
		CF														
3	15	0	7	3	2	3	7	8	0	0	0	0	0	15	0	15
	4.1%	-	10.0%	2.4%	2.8%	3.4%	3.5%	4.8%	-	-	-	-	-	4.1%	-	4.4%
			D													
4	9	0	6	3	0	0	4	5	0	0	0	0	0	9	0	9
	2.4%	-	8.6%	2.4%	-	-	2.0%	3.0%	-	-	-	-	-	2.4%	-	2.6%
			DEF													
5	39	0	12	18	2	7	25	14	0	0	0	0	0	39	2	37
	10.6%	-	17.1%	14.3%	2.8%	8.0%	12.5%	8.4%	-	-	-	-	-	10.6%	8.0%	10.8%
			E	E												
6	7	0	2	2	1	2	6	1	0	0	0	0	0	7	1	6
	1.9%	-	2.9%	1.6%	1.4%	2.3%	3.0%	0.6%	-	-	-	-	-	1.9%	4.0%	1.7%
7	6	1	2	0	2	1	3	2	1	0	0	0	0	6	0	6
	1.6%	7.1%	2.9%	-	2.8%	1.1%	1.5%	1.2%	100.0%	-	-	-	-	1.6%	-	1.7%
		D							GH							

8	10 2.7%	1 7.1%	3 4.3%	2 1.6%	2 2.8%	2 2.3%	4 2.0%	6 3.6%	0 -	0 -	0 -	0 -	0 -	10 2.7%	1 4.0%	9 2.6%
9	3 0.8%	0 -	1 1.4%	1 0.8%	1 1.4%	0 -	0 -	3 1.8%	0 -	0 -	0 -	0 -	0 -	3 0.8%	1 4.0%	2 0.6%
10	59 16.0%	1 7.1%	7 10.0%	21 16.7%	15 21.1%	15 17.2%	37 18.5%	22 13.2%	0 -	0 -	0 -	0 -	0 -	59 16.0%	5 20.0%	54 15.7%
11	1 0.3%	0 -	0 -	0 -	0 -	1 1.1%	1 0.5%	0 -	0 -	0 -	0 -	0 -	0 -	1 0.3%	0 -	1 0.3%
12	4 1.1%	0 -	1 1.4%	2 1.6%	0 -	1 1.1%	3 1.5%	1 0.6%	0 -	0 -	0 -	0 -	0 -	4 1.1%	0 -	4 1.2%
14	1 0.3%	0 -	1 1.4%	0 -	0 -	0 -	1 0.5%	0 -	0 -	0 -	0 -	0 -	0 -	1 0.3%	0 -	1 0.3%
15	12 3.3%	0 -	1 1.4%	4 3.2%	4 5.6%	3 3.4%	10 5.0%	2 1.2%	0 -	0 -	0 -	0 -	0 -	12 3.3%	0 -	12 3.5%
16	1 0.3%	0 -	0 -	0 -	1 1.4%	0 -	1 0.5%	0 -	0 -	0 -	0 -	0 -	0 -	1 0.3%	0 -	1 0.3%
20	37 10.1%	2 14.3%	4 5.7%	10 7.9%	12 16.9%	9 10.3%	20 10.0%	17 10.2%	0 -	0 -	0 -	0 -	0 -	37 10.1%	2 8.0%	35 10.2%
22	105 28.5%	3 21.4%	11 15.7%	40 31.7%	16 22.5%	35 40.2%	52 26.0%	53 31.7%	0 -	0 -	0 -	0 -	0 -	105 28.5%	7 28.0%	98 28.6%
22.8	3 0.8%	0 -	0 -	1 0.8%	1 1.4%	1 1.1%	3 1.5%	0 -	0 -	0 -	0 -	0 -	0 -	3 0.8%	1 4.0%	2 0.6%
23	2 0.5%	0 -	0 -	1 0.8%	0 -	1 1.1%	2 1.0%	0 -	0 -	0 -	0 -	0 -	0 -	2 0.5%	0 -	2 0.6%
25	3 0.8%	0 -	1 1.4%	1 0.8%	1 1.4%	0 -	0 -	3 1.8%	0 -	0 -	0 -	0 -	0 -	3 0.8%	0 -	3 0.9%
30	1 0.3%	0 -	1 1.4%	0 -	0 -	0 -	1 0.5%	0 -	0 -	0 -	0 -	0 -	0 -	1 0.3%	0 -	1 0.3%
45	1 0.3%	0 -	0 -	1 0.8%	0 -	0 -	0 -	1 0.6%	0 -	0 -	0 -	0 -	0 -	1 0.3%	0 -	1 0.3%
50	1 0.3%	0 -	0 -	1 0.8%	0 -	0 -	1 0.5%	0 -	0 -	0 -	0 -	0 -	0 -	1 0.3%	0 -	1 0.3%
Mean (Including 0)	12.98	10.07	9.53	13.62	13.34	15	13.11	12.85	7	0	0	0	0	12.98	12.39	13.02
Std. Err.	0.44	2.42	0.94	0.81	0.92	0.81	0.58	0.68	0	0	0	0	0	0.44	1.64	0.46
Mean (Excluding 0)	12.98	10.07	9.53	13.62	13.34	15	13.11	12.85	7	0	0	0	0	12.98	12.39	13.02
Std. Err.	0.44	2.42	0.94	0.81	0.92	0.81	0.58	0.68	0	0	0	0	0	0.44	1.64	0.46

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

ORD-475046-G0X8 Duff & Phelps Home Depot  
Banner1

[Table 29](#)

Q18. To confirm our survey is working properly, could you please confirm which one of the following types of products you were shown images of and asked to rate, in the preceding questions?

Base: Total Respondents

	Total	Age					Gender			Group					California vs Not California	
		18 to 24	25 to 39	40 to 54	55 to 64	65 or older	Male	Female	Non-binary	TEST 1	TEST 2	TEST 3	TEST 4	CONTROL	California	Not California
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
<b>Total</b>	<b>2002</b>	<b>122</b>	<b>433</b>	<b>593</b>	<b>387</b>	<b>467</b>	<b>1102</b>	<b>893</b>	<b>7</b>	<b>404</b>	<b>399</b>	<b>400</b>	<b>399</b>	<b>400</b>	<b>210</b>	<b>1792</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Android smartphone	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
Dog food	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
Flatbread such as pita or naan	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -
LED light bulb	2002 100.0%	122 100.0%	433 100.0%	593 100.0%	387 100.0%	467 100.0%	1102 100.0%	893 100.0%	7 100.0%	404 100.0%	399 100.0%	400 100.0%	399 100.0%	400 100.0%	210 100.0%	1792 100.0%
Blue jeans	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -	0 -

Proportions/Mean: Columns Tested (5% risk level) - B/C/D/E/F - G/H/I - J/K/L/M/N - O/P  
Overlap formulae used.

## Appendix F: Sample Survey Invitation<sup>75</sup>

**CLUB** OPINIONS



null

Take the survey below and help influence future products.

**START SURVEY**

Your opinions are cherished at ClubOpinions.

We thought you might like this new survey. Check it out now!

**Reward offer:**

**Average length:** 5 minutes

You can also access surveys by clicking on the following link:

[http://dkr1.ssisurveys.com/projects/start?psid=7BCVLvPV7XQ7snM4FB-oyA\\*\\*](http://dkr1.ssisurveys.com/projects/start?psid=7BCVLvPV7XQ7snM4FB-oyA**)

Thank you for your participation!

**The ClubOpinions Team**

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<sup>75</sup> “null” and “Reward offer” populate with info and/or the incentive applicable to the respondent’s panel community. The invites are also branded differently depending on the specific panel.

## Appendix G: Survey Screenshots

Q1



A survey screenshot for question Q1. At the top, a blue progress bar is at 0%. Below it, a white box contains the question "What is your age?" and "Select one". There are six radio button options: "17 or younger", "18 to 24", "25 to 39", "40 to 54", "55 to 64", and "65 or older". At the bottom of the white box is a light blue button labeled "Continue >".

What is your age?  
Select one

☐ 17 or younger  
☐ 18 to 24  
☐ 25 to 39  
☐ 40 to 54  
☐ 55 to 64  
☐ 65 or older

Continue >

Q2



A survey screenshot for question Q2. At the top, a blue progress bar is at 0%. Below it, a white box contains the question "What is your gender?" and "Select one". There are four radio button options: "Male", "Female", "Non-binary", and "Prefer not to state". At the bottom of the white box is a light blue button labeled "Continue >".

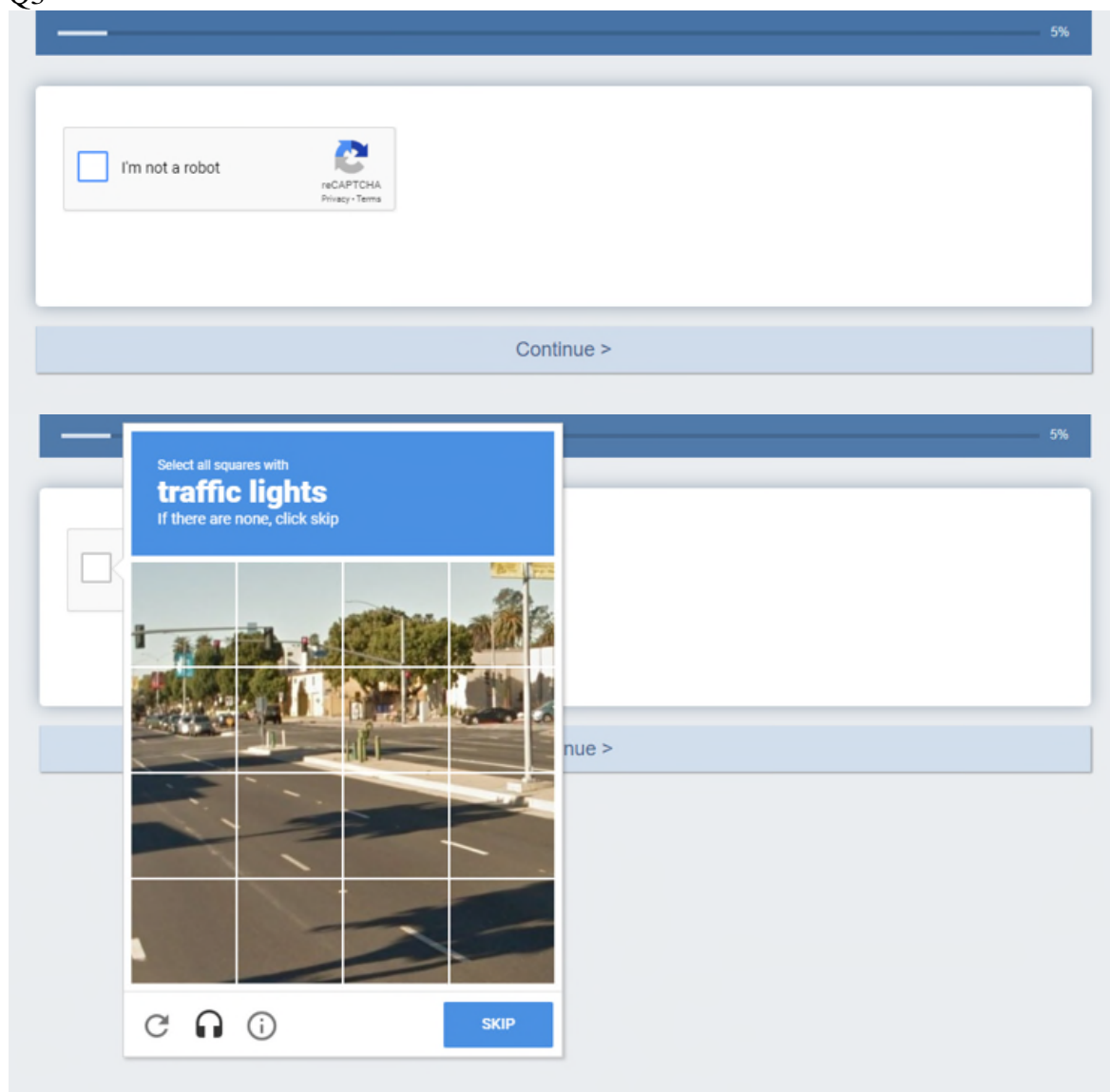
What is your gender?  
Select one

☐ Male  
☐ Female  
☐ Non-binary  
☐ Prefer not to state

Continue >



Q3



Q4



Which, if any, of the following types of businesses, do you or any member of your household currently work for?

Please select all that apply

- ☐ A pet food company
- ☐ A bakery or bread-making company
- ☐ A smartphone manufacturer
- ☐ A light bulb manufacturer
- ☐ A company that makes clothing
- ☐ None of the above

Continue >

Q5



Which, if any, of the following products did you personally purchase in the last 12 months?

Please select all that apply

- ☐ LED light bulb
- ☐ Android smartphone
- ☐ Blue jeans
- ☐ Dog food
- ☐ Flatbread such as pita or naan
- ☐ None of the above

Continue >

Q6



Please focus on your most recent purchase of an **LED light bulb for your home**. For that purchase, how involved were you personally in the decision as to which brand and type of LED light bulb to get?

Select one

- ☐ I was the primary decision-maker
- ☐ I was actively involved in the decision
- ☐ I was involved a little in the decision, but not much
- ☐ I was not at all involved in the decision
- ☐ Not sure or Don't remember
- ☐ I haven't ever bought an LED light bulb for my home

Continue >

Q7



Which of the following brands of LED light bulbs have you **ever** purchased?

Please select all that apply

- ☐ Feit
- ☐ Arsdan
- ☐ Sylvania
- ☐ Philips
- ☐ Cree
- ☐ General Electric (GE)
- ☐ Other brand
- ☐ Don't remember/not sure

Continue >

Q8

35%

When you are shopping for household products such as LED light bulbs, where do you consider purchasing them, either in store or online?

Please select all that apply

- ☐ Grocery store
- ☐ Home Depot
- ☐ Lowe's
- ☐ Amazon
- ☐ Drug store (CVS, Walgreens, etc.)
- ☐ Walmart
- ☐ Other retailer

[Continue >](#)

Q9

40%

LED light bulbs come with different levels of light output, often described in terms of the equivalent wattage for an incandescent bulb. For your future purchases of LED light bulbs for your home, which, if any, of the following kinds of LED light bulbs will you consider purchasing?

Please select all that apply

- ☐ 40 watt equivalent LED light bulb
- ☐ 60 watt equivalent LED light bulb
- ☐ 100 watt equivalent LED light bulb
- ☐ Other LED light bulb
- ☐ Not sure or don't know
- ☐ I won't ever purchase an LED light bulb for my home

[Continue >](#)

Q11



This question is testing your likelihood to pay attention while taking this survey. Please select "Very likely" from the list below.  
Select one

- ☐ Not at all likely
- ☐ Not likely
- ☐ Neither likely nor unlikely
- ☐ Somewhat likely
- ☐ Very likely

[Continue >](#)

Q12



Thank you. You have qualified for our survey.

If you don't know any answer to any question or if you are unsure, please select the response "Not sure or Don't know".  
**Please do not guess.**

If you normally **wear glasses or contact lenses** when viewing a screen, please wear them for the survey.

Also, during this interview **please do not look up any information on the internet.**

[Continue >](#)

Q13

61%

We would like to ask your opinion about one or two LED light bulb products you might see if you were shopping at Home Depot. You will view images of a product's package, then you will be asked some questions about that product.

**Please look at the product's package as you normally would if you were considering purchasing it.** Take as much time as you like to look at the images, and scroll if necessary to see everything on the page.





Please try to answer all questions to the best of your ability. We are interested in your opinions. There are no right or wrong answers and we will not try to sell you anything based on your answers.


Continue >

**THE 60 WATT CONTROL IMAGES**

61%

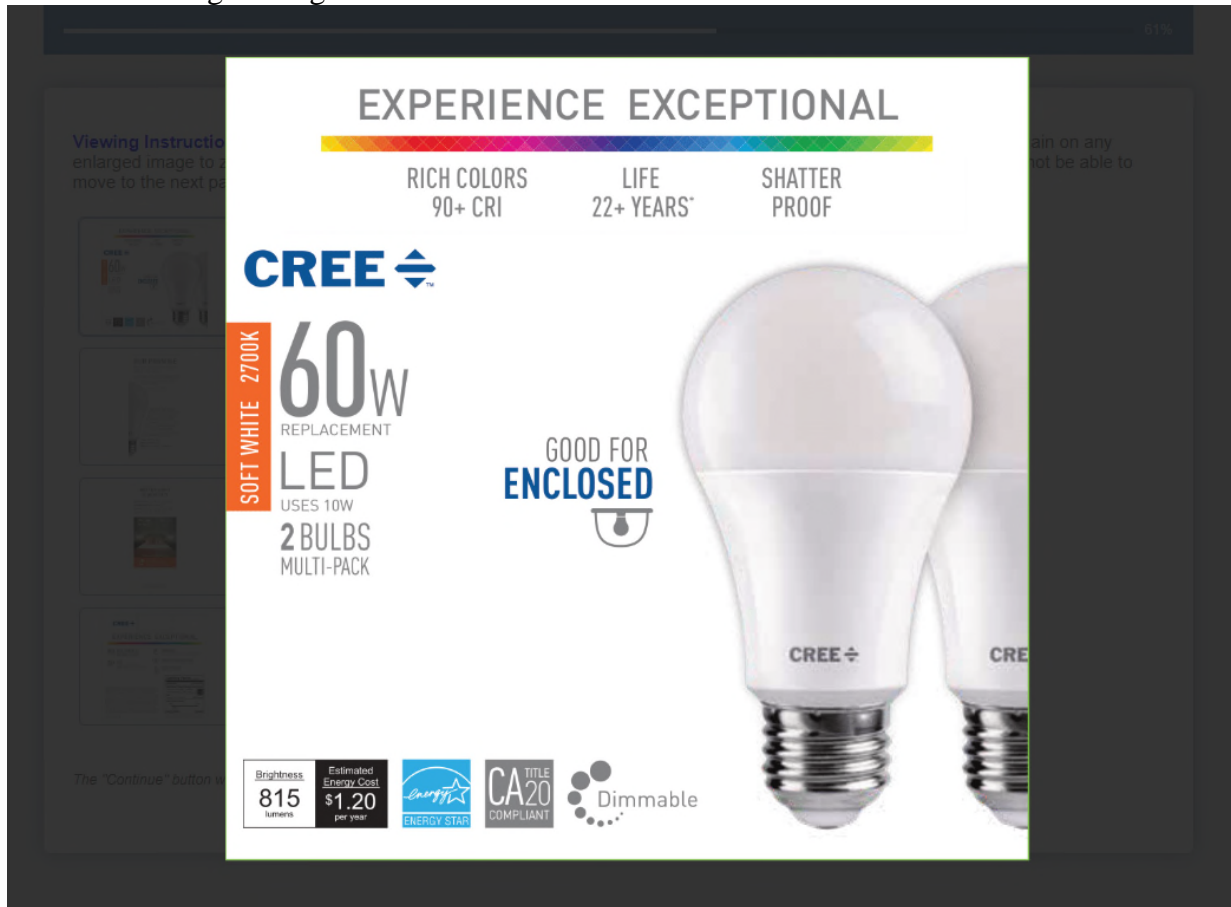
**Viewing Instructions.** Please click/tap on the thumbnail images to view a larger version of them. You can also click/tap again on any enlarged image to zoom in further. Please look at each image as if you were considering purchasing this product. You will not be able to move to the next page until you **enlarge each of the images**.

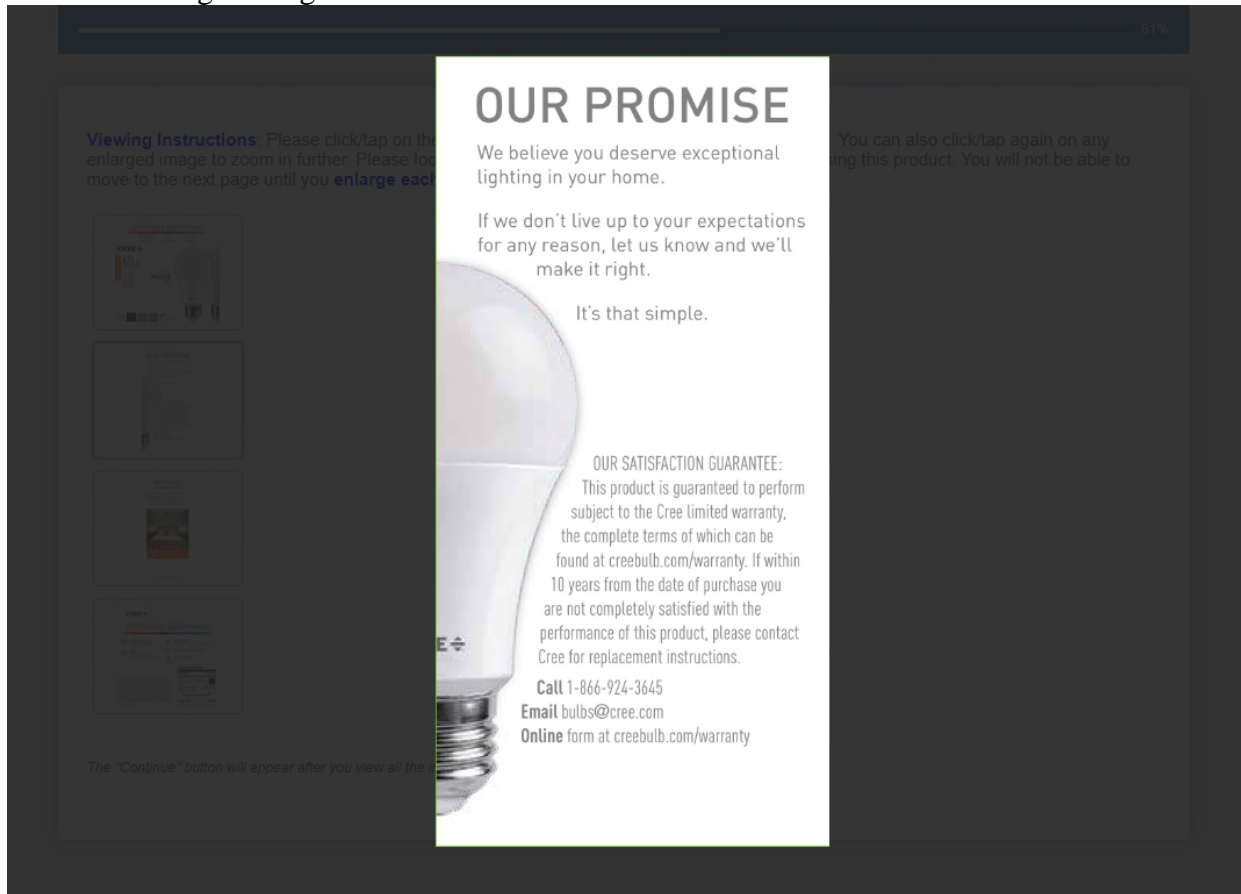


Continue >

FRONT – enlarged image



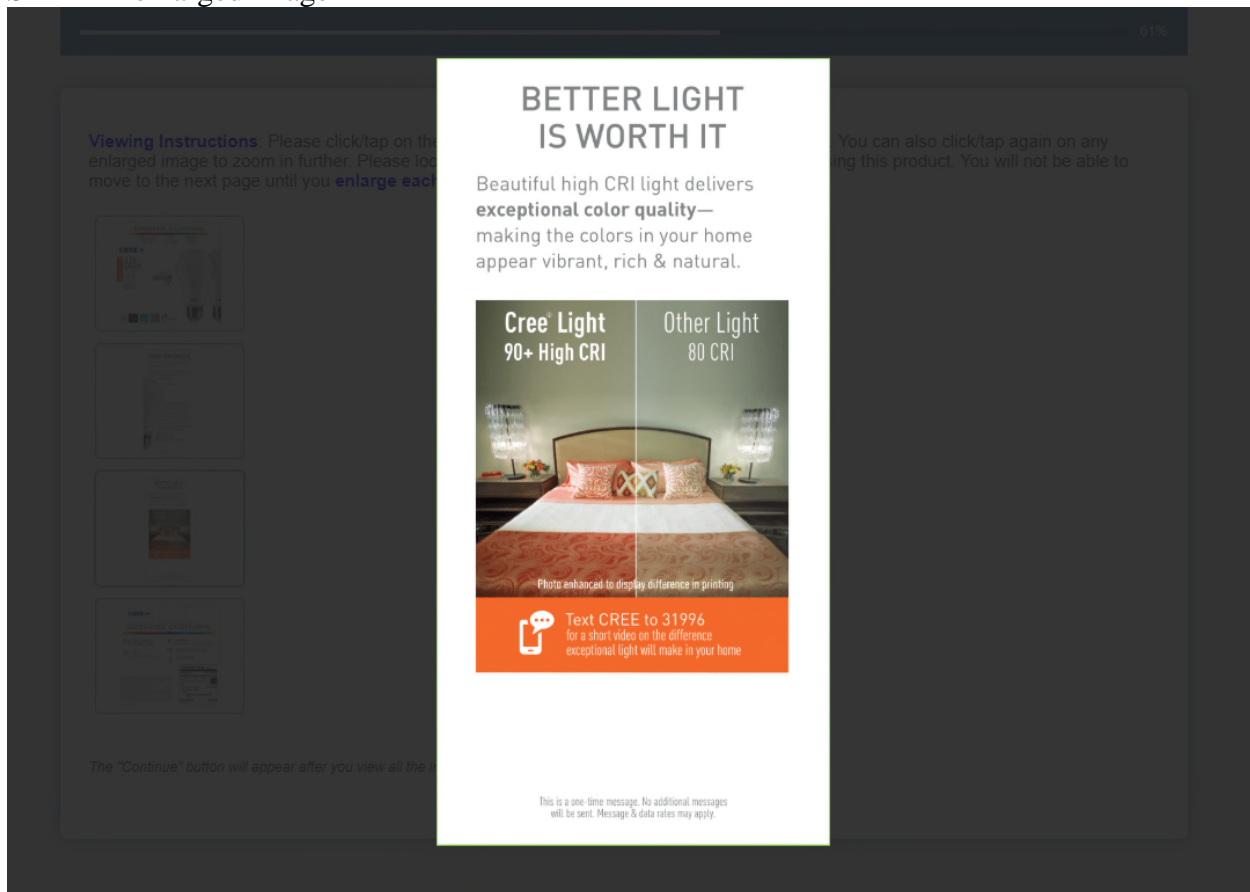
SIDE 1 – enlarged image





DUFF & PHELPS

SIDE 2 – enlarged image



BACK – enlarged image

**CREE**

**EXPERIENCE EXCEPTIONAL**

**90+ CRI LIGHT** RICH, VIBRANT & NATURAL COLORS

**22+ YEARS\*** LIFE  
25,000 hour rated life exceeds ENERGY STAR® minimum requirements

**DIMMABLE**  
Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

**GOOD FOR ENCLOSED USE**

**SHATTERPROOF**

**Lighting Facts** Per Bulb

<b>Brightness</b>	<b>815 lumens</b>
<b>Estimated Yearly Energy Cost</b>	<b>\$1.20</b>
Based on 3 hrs/day, 11¢/kWh Cost depends on rates and use	
<b>Life</b>	<b>22.8 years</b>
Based on 3 hrs/day	
<b>Light Appearance</b>	
Warm ————— Cool	
2700 K	
<b>Energy Used</b>	<b>10 watts</b>

CAUTIONS & WARNINGS: Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information.

120 V~ /60 Hz /90 mA

\*Based on 3 hours per day. 25,000 hour rated lifetime.

Continue >

Q14

61%

Were you able to view the images clearly?

Select one

☐ Yes

☐ No





☐ Not sure or don't know

Continue >

Q15

61%

To view the images again, click on the thumbnails.

Suppose the next time you are shopping for 60 watt equivalent LED light bulbs, either in a store or online, you see this product. The price of this package of two LED light bulbs is \$8.10 (\$4.05 per bulb).

Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means "Extremely Unlikely" and 10 means "Extremely Likely".

*(Please click on the scale and move the slider to change the likelihood)*

1

2

3

4

5

6

7

8

9

10

Extremely  
Unlikely

Extremely  
Likely

Not sure or don't know

Continue >

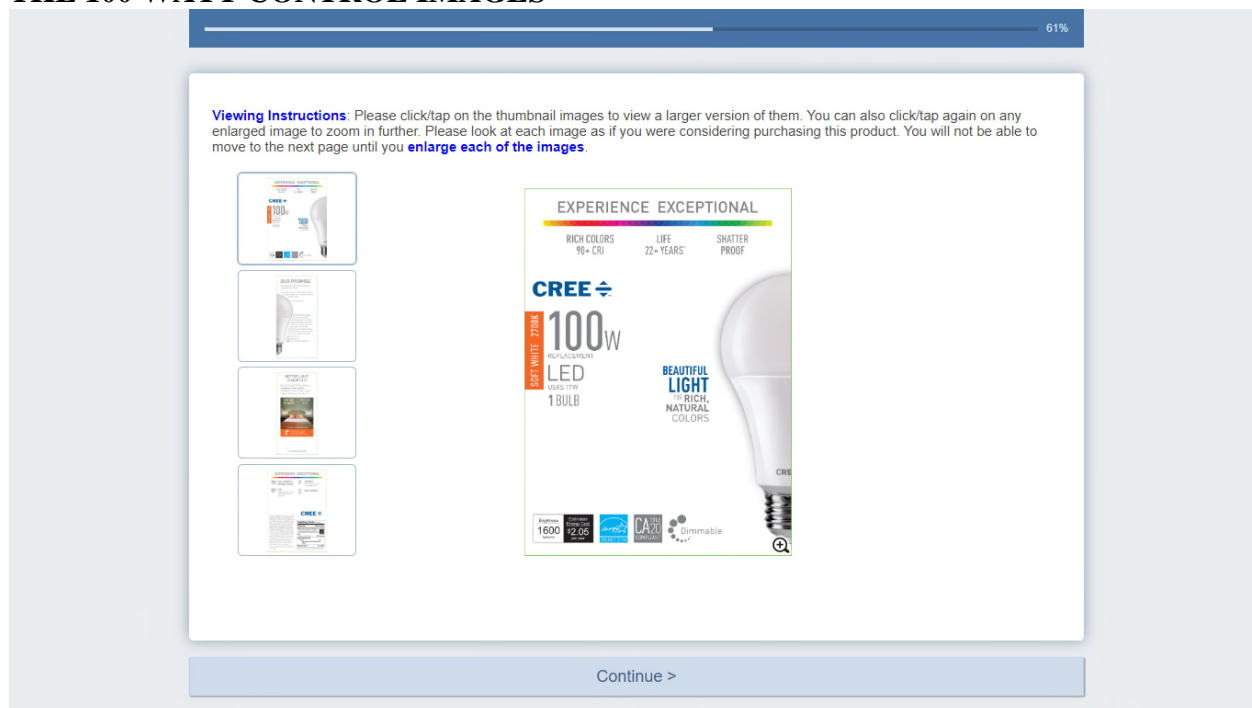
## Introduction to the second product

61%

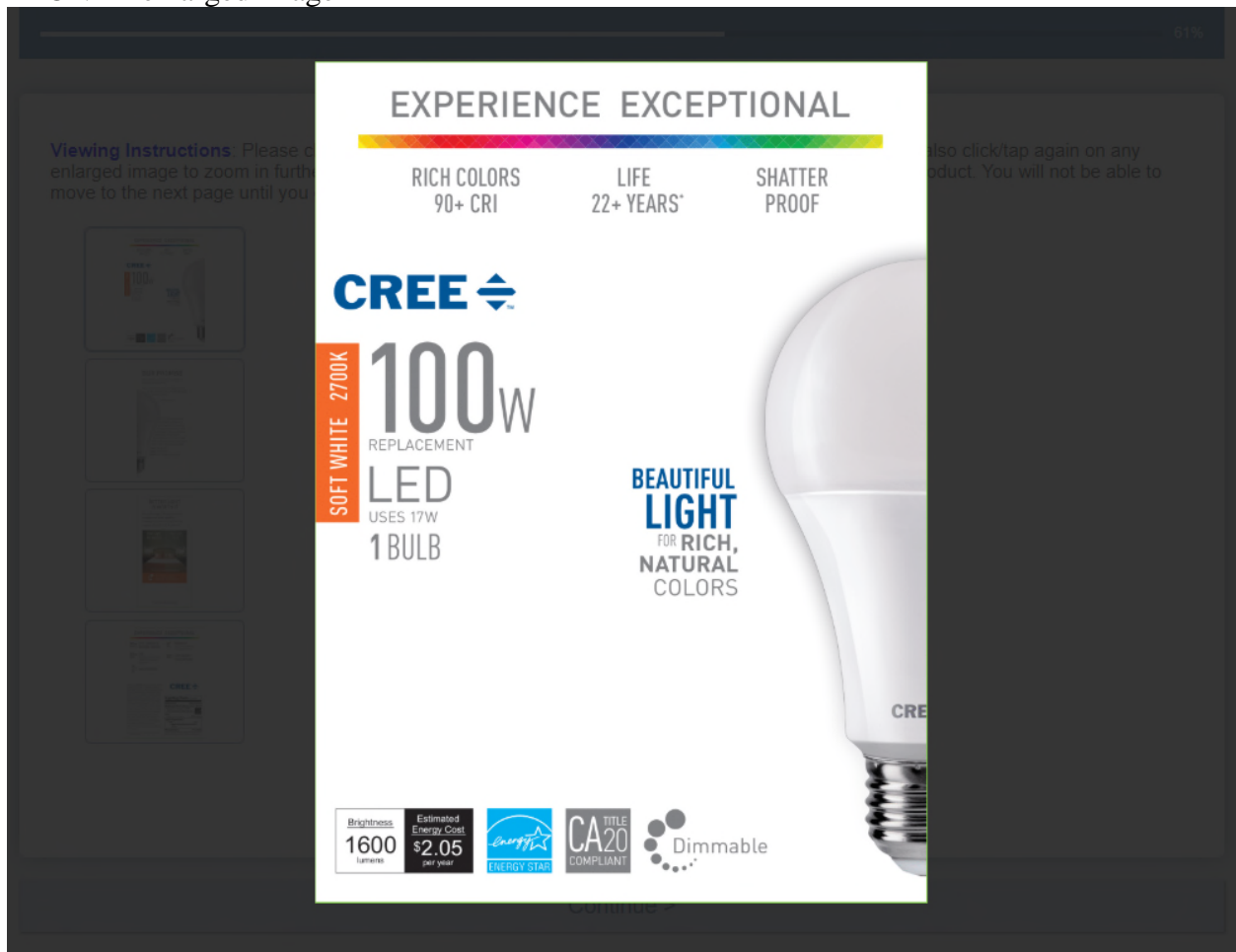
You will now see images and answer questions for a second LED light bulb product.

Again, please look at the product's package as you normally would if you were considering purchasing it. Take as much time as you like to look at the images, and scroll if necessary to see everything on the page.

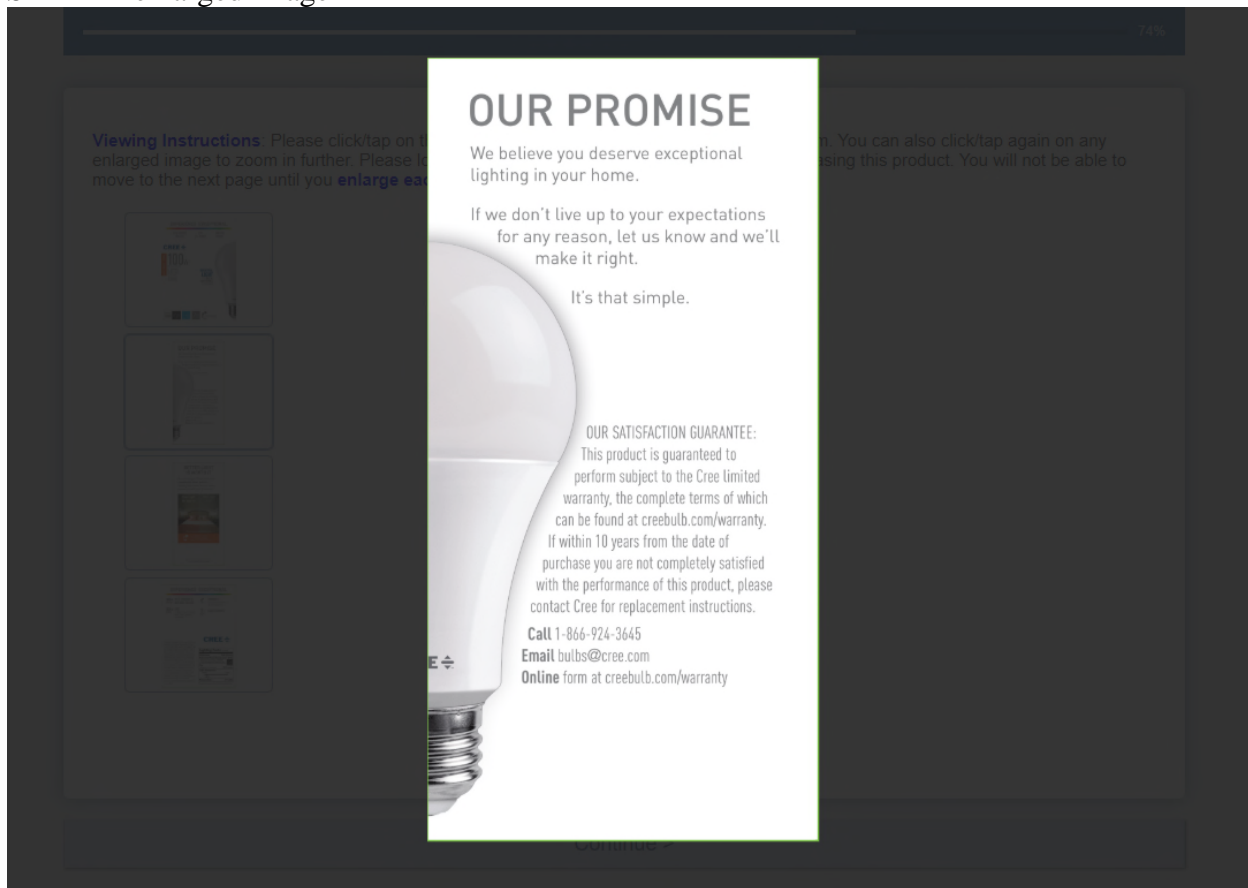
Continue >

**THE 100 WATT CONTROL IMAGES**

FRONT – enlarged image

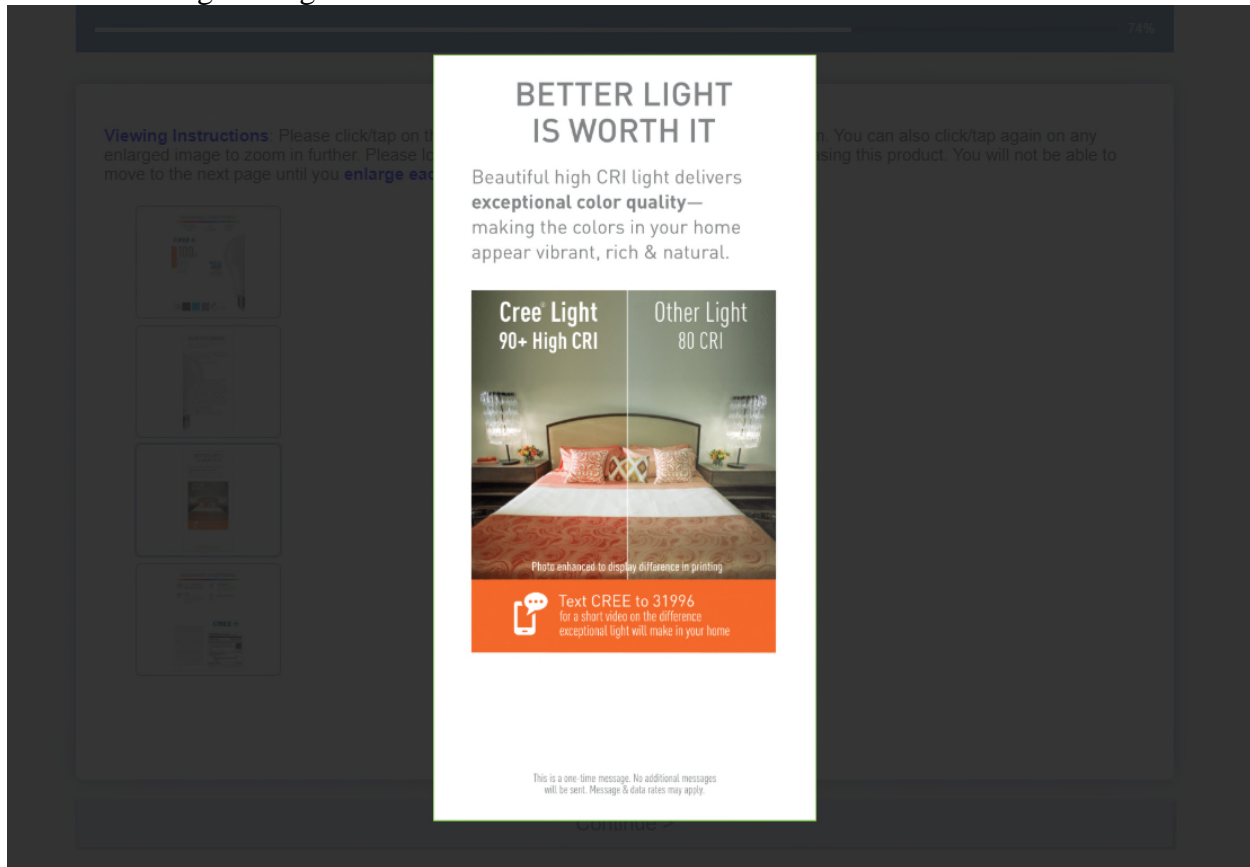


SIDE 1 – enlarged image



DUFF & PHELPS

SIDE 2 – enlarged image



BACK – enlarged image


**EXPERIENCE EXCEPTIONAL**

**90+ CRI LIGHT** RICH, VIBRANT & NATURAL COLORS

**22+ YEARS\* LIFE** 25,000 hour rated life exceeds ENERGY STAR® minimum requirements

**DIMMABLE**  
Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

**SHATTERPROOF**

**CREE** 

**CAUTIONS & WARNINGS:** Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information. Not for use in totally enclosed and recessed fixtures. 120 V~ /60 Hz

**Lighting Facts** Per Bulb

<b>Brightness</b>	1600 lumens
<b>Estimated Yearly Energy Cost</b>	\$2.05
Based on 3 hrs/day, 11¢/kWh Cost depends on rates and use	
<b>Life</b>	22.8 years
Based on 3 hrs/day	
<b>Light Appearance</b>	Warm 2700 K Cool
<b>Energy Used</b>	17 watts

\*Based on 3 hours per day, 25,000 hour rated lifetime.

Q16

61%

Were you able to view the images clearly?  
Select one

☐ Yes

☐ No

☐ Not sure or don't know





Continue >



Q17

77%

To view the images again, click on the thumbnails.

Suppose it is the next time you are shopping for a 100 watt equivalent LED light bulb, either in a store or online, and you see this product. The price of this package of one LED light bulb is \$8.78.

Based on your review of the product and its price, how likely would you be to purchase it? Please respond on a scale from 1 to 10 where 1 means "Extremely Unlikely" and 10 means "Extremely Likely".

*(Please click on the scale and move the slider to change the likelihood)*

1

Extremely Unlikely

10

Extremely Likely





Not sure or don't know

Continue >

Q17.5

79%

To view the images again, click on the thumbnails.

I'd like to ask one more question about this **60 watt equivalent** LED light bulb you saw earlier. How long would you expect this LED light bulb to last, if it were in use in your home?

years

Continue >

Q18



To confirm our survey is working properly, could you please confirm which one of the following types of products you were shown images of and asked to rate, in the preceding questions?

Select one

- ☐ Android smartphone
- ☐ Dog food
- ☐ Flatbread such as pita or naan
- ☐ LED light bulb
- ☐ Blue jeans

Continue >

**Appendix H: Images Used in the Survey**

EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LIFE  
22+ YEARS\*

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**60W**

REPLACEMENT

**LED**

USES 10W

**2 BULBS**  
MULTI-PACK

GOOD FOR  
**ENCLOSED**



Brightness

**815**  
lumens

Estimated  
Energy Cost

**\$1.20**  
per year



# OUR PROMISE

We believe you deserve exceptional lighting in your home.

If we don't live up to your expectations for any reason, let us know and we'll make it right.

It's that simple.

## OUR SATISFACTION GUARANTEE:

This product is guaranteed to perform subject to the Cree limited warranty, the complete terms of which can be found at [creebulb.com/warranty](http://creebulb.com/warranty). If within 10 years from the date of purchase you are not completely satisfied with the performance of this product, please contact Cree for replacement instructions.

**Call** 1-866-924-3645

**Email** [bulbs@cree.com](mailto:bulbs@cree.com)

**Online** form at [creebulb.com/warranty](http://creebulb.com/warranty)



# BETTER LIGHT IS WORTH IT

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appear vibrant, rich & natural.



Text CREE to 31996  
for a short video on the difference  
exceptional light will make in your home

This is a one-time message. No additional messages  
will be sent. Message & data rates may apply.



# EXPERIENCE EXCEPTIONAL

**90+**  
CRI LIGHT

**RICH, VIBRANT &  
NATURAL COLORS**



**DIMMABLE**

Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

**22+**  
YEARS\*

**LIFE**

25,000 hour rated life exceeds  
ENERGY STAR® minimum requirements



**GOOD FOR ENCLOSED USE**



**SHATTERPROOF**

**CAUTIONS & WARNINGS:** Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information.

120 V- /60 Hz /90 mA

## Lighting Facts Per Bulb

**Brightness** 815 lumens

**Estimated Yearly Energy Cost** \$1.20

Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use



**Life**

Based on 3 hrs/day **22.8 years**

**Light Appearance**

Warm 

 Cool  
2700 K

**Energy Used**

**10 watts**

\*Based on 3 hours per day. 25,000 hour rated lifetime.

EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

100% SATISFACTION  
GUARANTEE

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**60W**

REPLACEMENT

**LED**

USES 10W

**2 BULBS**  
MULTI-PACK

GOOD FOR  
**ENCLOSED**



Brightness

**815**  
lumens

Estimated  
Energy Cost

**\$1.20**  
per year





# OUR PROMISE

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Our LED bulbs work better and last longer. But if we don't live up to your expectations for any reason, let us know and we'll make it right.

It's that simple.

## 100% SATISFACTION GUARANTEE:

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# EXPERIENCE EXCEPTIONAL

**90+**  
CRI LIGHT

**RICH, VIBRANT &  
NATURAL COLORS**



**DIMMABLE**

Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

**22+**  
YEARS\*

**LONGER LIFE**

25,000 hour rated life exceeds  
ENERGY STAR® minimum requirements



**100% SATISFACTION GUARANTEE**



**GOOD FOR ENCLOSED USE**



**SHATTERPROOF**

**82% LESS ENERGY  
CONSUMPTION†**

**\$226 LIFETIME  
ENERGY SAVINGS†**

**CAUTIONS & WARNINGS:** Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information.

120 V - /60 Hz /90 mA

† At \$0.11 per kWh when compared to 60W incandescent.  
25,000 hour lifetime.

## Lighting Facts Per Bulb

**Brightness** **815 lumens**

**Estimated Yearly Energy Cost \$1.20**

Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use



**Life**

Based on 3 hrs/day **22.8 years**

**Light Appearance**

Warm 
▲
●
 Cool  
2700 K

**Energy Used**

**10 watts**

\*Based on 3 hours per day. 25,000 hour rated lifetime.

# EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

100% SATISFACTION  
GUARANTEE

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**60W**

REPLACEMENT

**LED**

USES 10W

**2 BULBS**  
MULTI-PACK

GOOD FOR  
**ENCLOSED**



Brightness

**815**  
lumens

Estimated  
Energy Cost

**\$1.20**  
per year



# OUR PROMISE

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It's that simple.

## 100% SATISFACTION GUARANTEE:

This product is guaranteed to give 100% performance satisfaction subject to the Cree limited warranty, the complete terms of which can be found at [creebulb.com/warranty](http://creebulb.com/warranty). If within 10 years from the date of purchase you are not completely satisfied with the performance of this product, please contact Cree for replacement instructions.

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**Email** [bulbs@cree.com](mailto:bulbs@cree.com)

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# EXPERIENCE EXCEPTIONAL

**90+**  
CRI LIGHT

**RICH, VIBRANT &  
NATURAL COLORS**



**DIMMABLE**

Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

**22+**  
YEARS\*

**LONGER LIFE**

25,000 hour rated life exceeds  
ENERGY STAR® minimum requirements



**100% SATISFACTION GUARANTEE**



**GOOD FOR ENCLOSED USE**



**SHATTERPROOF**

**82% LESS ENERGY CONSUMPTION†**

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120 V - /60 Hz /90 mA

† At \$0.11 per kWh when compared to 60W incandescent.  
25,000 hour lifetime.

## Lighting Facts Per Bulb

**Brightness** 815 lumens

**Estimated Yearly Energy Cost** \$1.20

Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use



**Life**

Based on 3 hrs/day **22.8 years**

**Light Appearance**

Warm 
▲
●
 Cool  
2700 K

**Energy Used**

**10 watts**

\*Based on 3 hours per day. 25,000 hour rated lifetime.

EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**60W**

REPLACEMENT

**LED**

USES 10W

**2 BULBS**  
MULTI-PACK

GOOD FOR  
**ENCLOSED**



Brightness

**815**  
lumens

Estimated  
Energy Cost

**\$1.20**  
per year





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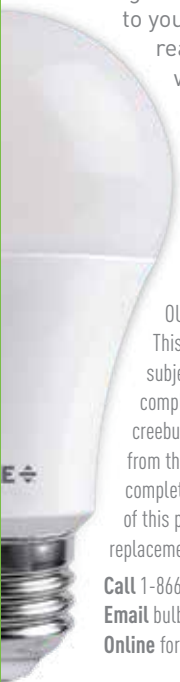
## OUR SATISFACTION GUARANTEE:

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# EXPERIENCE EXCEPTIONAL

**90+**  
CRI LIGHT

**RICH, VIBRANT &  
NATURAL COLORS**



**DIMMABLE**

Visit [creebulb.com/dimmers](http://creebulb.com/dimmers) for compatible dimmers

**22+**  
YEARS\*

**LONGER LIFE**

25,000 hour rated life exceeds  
ENERGY STAR® minimum requirements

**82%**

**LESS ENERGY CONSUMPTION†**



**SHATTERPROOF**



**GOOD FOR ENCLOSED USE**

**CAUTIONS & WARNINGS:** Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information.

120 V- /60 Hz /90 mA

† At \$0.11 per kWh when compared to 60W incandescent.  
25,000 hour lifetime.

## Lighting Facts Per Bulb

**Brightness** 815 lumens

**Estimated Yearly Energy Cost** \$1.20

Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use



**Life**

Based on 3 hrs/day **22.8 years**

**Light Appearance**

Warm 
▲
●
 Cool  
2700 K

**Energy Used**

**10 watts**

\*Based on 3 hours per day. 25,000 hour rated lifetime.

EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LIFE  
22+ YEARS\*

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**60W**

REPLACEMENT

**LED**

USES 10W

**2 BULBS**  
MULTI-PACK

GOOD FOR  
**ENCLOSED**



Brightness

**815**  
lumens

Estimated  
Energy Cost

**\$1.20**  
per year



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It's that simple.

## OUR SATISFACTION GUARANTEE:

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**Call** 1-866-924-3645

**Email** [bulbs@cree.com](mailto:bulbs@cree.com)

**Online** form at [creebulb.com/warranty](http://creebulb.com/warranty)



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# EXPERIENCE EXCEPTIONAL

**90+**  
CRI LIGHT

**RICH, VIBRANT &  
NATURAL COLORS**



**DIMMABLE**

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**22+**  
YEARS\*

**LIFE**

25,000 hour rated life exceeds  
ENERGY STAR® minimum requirements

**82%**

**LESS ENERGY CONSUMPTION†**



**SHATTERPROOF**



**GOOD FOR ENCLOSED USE**

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120 V- /60 Hz /90 mA

† At \$0.11 per kWh when compared to 60W incandescent.  
25,000 hour lifetime.

Lighting Facts <small>Per Bulb</small>	
<b>Brightness</b>	<b>815 lumens</b>
<b>Estimated Yearly Energy Cost</b>	<b>\$1.20</b>
Based on 3 hrs/day, 11¢/kWh Cost depends on rates and use	
<b>Life</b>	<b>22.8 years</b>
Based on 3 hrs/day	
<b>Light Appearance</b>	
Warm	Cool
2700 K	
<b>Energy Used</b>	<b>10 watts</b>

\*Based on 3 hours per day. 25,000 hour rated lifetime.

# EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LIFE  
22+ YEARS\*

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**100**W

REPLACEMENT

**LED**

USES 17W

**1 BULB**

**BEAUTIFUL  
LIGHT**  
FOR RICH,  
NATURAL  
COLORS

CREE

Brightness

**1600**  
lumens

Estimated  
Energy Cost

**\$2.05**  
per year





# OUR PROMISE

We believe you deserve exceptional lighting in your home.

If we don't live up to your expectations for any reason, let us know and we'll make it right.

It's that simple.

## OUR SATISFACTION GUARANTEE:

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Beautiful high CRI light delivers  
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making the colors in your home  
appear vibrant, rich & natural.



Text CREE to 31996  
for a short video on the difference  
exceptional light will make in your home

This is a one-time message. No additional messages  
will be sent. Message & data rates may apply.

**90+**  
CRI LIGHT**RICH, VIBRANT &  
NATURAL COLORS****22+**  
YEARS\***LIFE**25,000 hour rated life exceeds  
ENERGY STAR® minimum  
requirements**DIMMABLE**Visit [creebulb.com/dimmers](http://creebulb.com/dimmers)  
for compatible dimmers**SHATTERPROOF**

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Not for use in totally enclosed and recessed fixtures.  
120 V~ /60 Hz

**CREE** **Lighting Facts** Per Bulb**Brightness** 1600 lumens**Estimated Yearly Energy Cost** \$2.05Based on 3 hrs/day, 11c/kWh  
Cost depends on rates and use**Life**Based on 3 hrs/day **22.8 years****Light Appearance**

Warm 
▲
 Cool

2700 K

**Energy Used** 17 watts

\*Based on 3 hours per day. 25,000 hour rated lifetime.

EXPERIENCE EXCEPTIONAL



RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

100% SATISFACTION  
GUARANTEE

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**100**<sub>W</sub>

REPLACEMENT

**LED**

USES 17W

**1 BULB**

**BEAUTIFUL  
LIGHT**  
FOR RICH,  
NATURAL  
COLORS



Brightness

**1600**  
lumens

Estimated  
Energy Cost

**\$2.05**  
per year



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YEARS\***LONGER LIFE**25,000 hour rated life  
exceeds ENERGY STAR®  
minimum requirements**SHATTERPROOF****100% SATISFACTION  
GUARANTEE****DIMMABLE**Visit [creebulb.com/dimmers](http://creebulb.com/dimmers)  
for compatible dimmers**82%****LESS ENERGY  
CONSUMPTION†****\$226****LIFETIME ENERGY  
SAVINGS†**

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25,000 hour lifetime.

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Cost depends on rates and use**Life**Based on 3 hrs/day **22.8 years****Light Appearance**

Warm 
▲
 Cool

2700 K

**Energy Used** 17 watts

\*Based on 3 hours per day. 25,000 hour rated lifetime.

EXPERIENCE EXCEPTIONAL



RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

100% SATISFACTION  
GUARANTEE

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**100**<sub>W</sub>

REPLACEMENT

**LED**

USES 17W

**1 BULB**

**BEAUTIFUL  
LIGHT**  
FOR RICH,  
NATURAL  
COLORS



Brightness

**1600**  
lumens

Estimated  
Energy Cost

**\$2.05**  
per year





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exceeds ENERGY STAR®  
minimum requirements**SHATTERPROOF****DIMMABLE**Visit [creebulb.com/dimmers](http://creebulb.com/dimmers)  
for compatible dimmers**82%****LESS ENERGY  
CONSUMPTION†****100% SATISFACTION  
GUARANTEE**

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25,000 hour lifetime.

**CREE** **Lighting Facts** Per Bulb**Brightness** 1600 lumens**Estimated Yearly Energy Cost** \$2.05Based on 3 hrs/day, 11c/kWh  
Cost depends on rates and use**Life**Based on 3 hrs/day **22.8 years****Light Appearance**

Warm 
▲
 Cool

2700 K

**Energy Used** 17 watts

\*Based on 3 hours per day. 25,000 hour rated lifetime.

EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**100**<sub>W</sub>

REPLACEMENT

**LED**

USES 17W

**1 BULB**

**BEAUTIFUL  
LIGHT**  
FOR RICH,  
NATURAL  
COLORS

CRE

Brightness

**1600**  
lumens

Estimated  
Energy Cost

**\$2.05**  
per year



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Warm 
▲
 Cool

2700 K

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RICH COLORS  
90+ CRI

LIFE  
22+ YEARS\*

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**100**W

REPLACEMENT

**LED**

USES 17W

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COLORS

CRE

Brightness

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Estimated  
Energy Cost

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per year





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YEARS\***LIFE**  
25,000 hour rated life exceeds  
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Cost depends on rates and use**Life**Based on 3 hrs/day **22.8 years****Light Appearance**

Warm 
▲
 Cool  
2700 K

**Energy Used** 17 watts

\*Based on 3 hours per day. 25,000 hour rated lifetime.

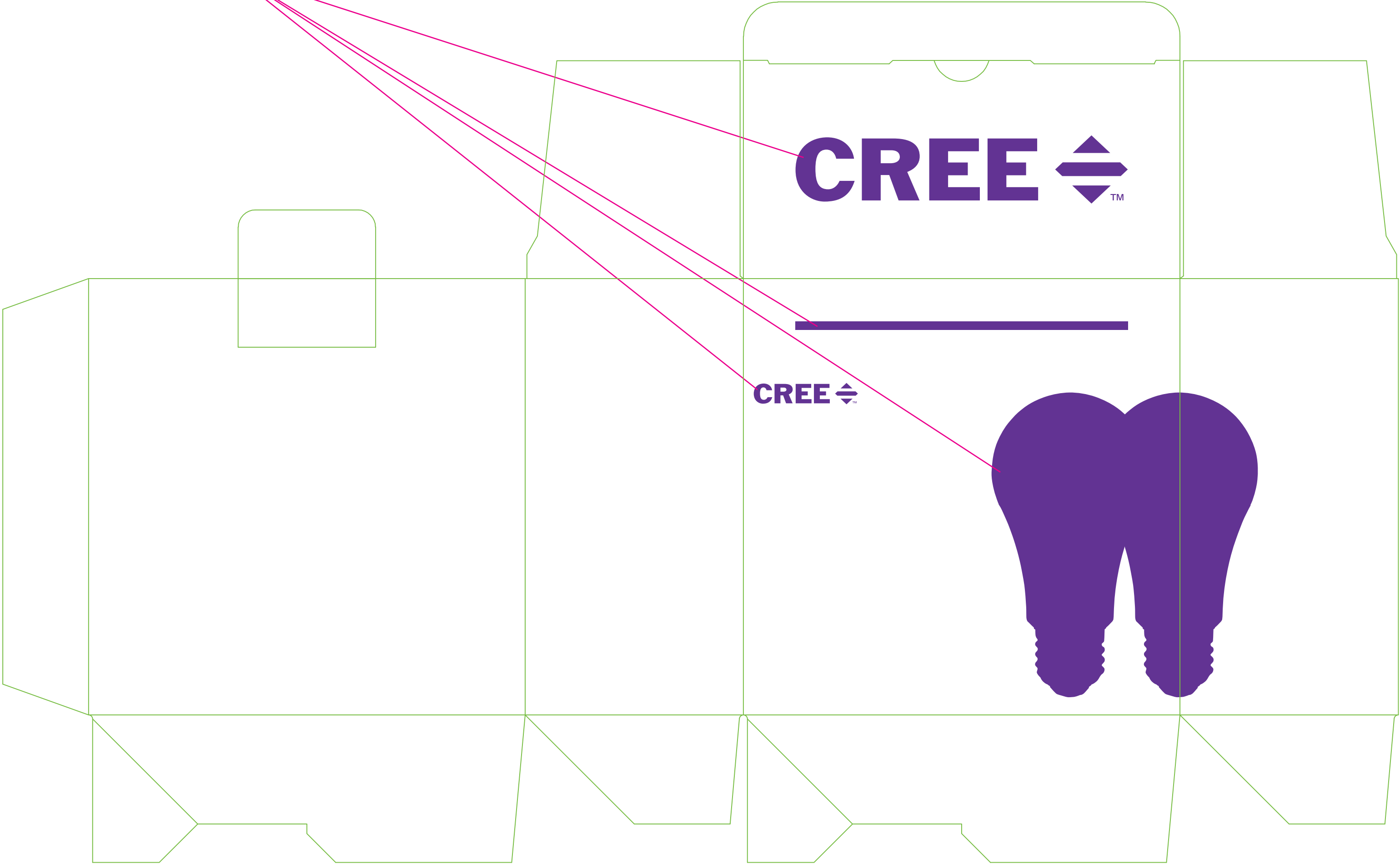
**Appendix I: Original Packaging Images**



PROJECT	DIELINE	FILE	CONTACT	FORMATS	IMAGES	COLOR
<b>DESCRIPTION</b> A19 60W Soft White 2-Pack Carton	<b>NO.</b> CB A19-2PCS V0.pdf	<b>APPLICATION</b> Illustrator CC	<b>PROJECT MANAGER</b> Louise LaRoche W 919.872.8172 M 919.426.7581 <a href="mailto:louise.larochelle@btbmarketing.com">louise.larochelle@btbmarketing.com</a>	<b>ARTWORK</b> DINOT DINOT-CondBold DINOT-Cond DINOT-CondIta DINOT-CondMedium DINOT-Medium Helvetica 77 Bold Condensed Helvetica Neue Bold Helvetica Neue LT Std 55 Roman	<b>CMYK</b> CRC1139 A19 60-75W Standing 6x6_double.tif Spring-Launch-Comparison-Image TALL 10.2.17.psd	<b>PROCESS</b>  Cyan  Magenta  Yellow  Black
<b>JOB NO</b> CRC1143r2	<b>SIZE</b> Dimensions not available on supplied dieline	<b>TRIM</b> Dimensions not available on supplied dieline	<b>ALTERNATE CONTACT</b> Geoff Dunkak W 919.872.8172 M 919.302.5149 <a href="mailto:geoff.dunkak@btbmarketing.com">geoff.dunkak@btbmarketing.com</a>	<b>CALLOUTS</b> Arial Bold Arial Webdings		<b>SPOT UV INDICATOR</b>  Spot UV - 267
<b>FILE NAME</b> CRC1143r2 Tango A19 60W SW pkg.ai	<b>DATE</b> 10.23.2017	<b>BLEED</b> None				
<b>DATE</b> 09.20.2018	<b>SOURCE</b> Dangoo	<b>NOTES</b> See reference PDF				
<b>PREPARED FOR:</b> Cree, Inc.						

ALL COLORS ARE FOUR-COLOR PROCESS (CMYK)

SPOT UV IS INDICATED BY SPOT UV - 267  
ON THE LAYER: SPOT UV FPO ONLY



PROJECT	DIELINE	FILE	CONTACT	FONTS	IMAGES	COLOR
<b>DESCRIPTION</b> A19 60W Soft White 2-Pack Carton	<b>NO.</b> CB A19-2PCS V0.pdf	<b>APPLICATION</b> Illustrator CC	<b>PROJECT MANAGER</b> Louise LaRochelle W 919.872.8172 M 919.426.7581 louise.larochelle@btbmarketing.com	<b>ARTWORK</b> DINOT DINOT-CondBold DINOT-Cond DINOT-CondIta DINOT-CondMedium DINOT-Medium Helvetica 77 Bold Condensed Helvetica Neue Bold Helvetica Neue LT Std 55 Roman	<b>CMYK</b> CRC1139 A19 60-75W Standing 6x6_double.tif Spring-Launch-Comparison-Image TALL 10.2.17.psd	<b>PROCESS</b> Cyan Magenta Yellow Black
<b>JOB NO</b> CRC1143r2	<b>SIZE</b> Dimensions not available on supplied dieline	<b>TRIM</b> Dimensions not available on supplied dieline	<b>ALTERNATE CONTACT</b> Geoff Dunkak W 919.872.8172 M 919.302.5149 geoff.dunkak@btbmarketing.com	<b>CALLOUTS</b> Arial Bold Arial Webdings		<b>SPOT UV INDICATOR</b> Spot UV - 267
<b>FILE NAME</b> CRC1143r2 Tango A19 60W SW pkg.ai	<b>DATE</b> 10.23.2017	<b>BLEED</b> None				
<b>DATE</b> 09.20.2018	<b>SOURCE</b> Dangoo	<b>NOTES</b> See reference PDF				
<b>PREPARED FOR:</b> Cree, Inc.						

# EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

10 YEAR 100%  
GUARANTEE

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**60W**

REPLACEMENT

**LED**

USES 10W

**2 BULBS**  
MULTI-PACK

GOOD FOR  
**ENCLOSED**



Brightness

**815**  
lumens

Estimated  
Energy Cost

**\$1.20**  
per year



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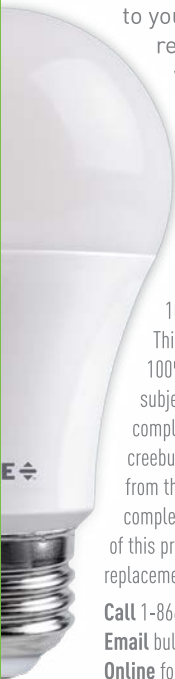
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CRI LIGHT

**RICH, VIBRANT &  
NATURAL COLORS**



**DIMMABLE**

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**22+**  
YEARS\*

**LONGER LIFE**

25,000 hour rated life exceeds  
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**100% SATISFACTION GUARANTEE**



**SHATTERPROOF**



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120 V~ /60 Hz /90 mA

## Lighting Facts Per Bulb

**Brightness** **815 lumens**

**Estimated Yearly Energy Cost \$1.20**

Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use



**Life**

Based on 3 hrs/day **22.8 years**

**Light Appearance**

Warm 
▲
▼
 Cool  
2700 K

**Energy Used**

**10 watts**

\*Based on 3 hours per day. 25,000 hour rated lifetime.



Made in China

Cree, Inc.

4600 Silicon Drive, Durham, NC 27703 USA

Phone: 866.924.3645 [www.cree.com](http://www.cree.com)

Patent: [www.cree.com/patents](http://www.cree.com/patents)

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PLEASE  
RECYCLE



LPC001853 REV C  
TA19-08027MDFH25-12DE26-1-12

PROOF OF PURCHASE



CA RESIDENTS WARNING:  
Do not burn or dispose of this product in a fire.  
www.pdbwarnings.ca.gov

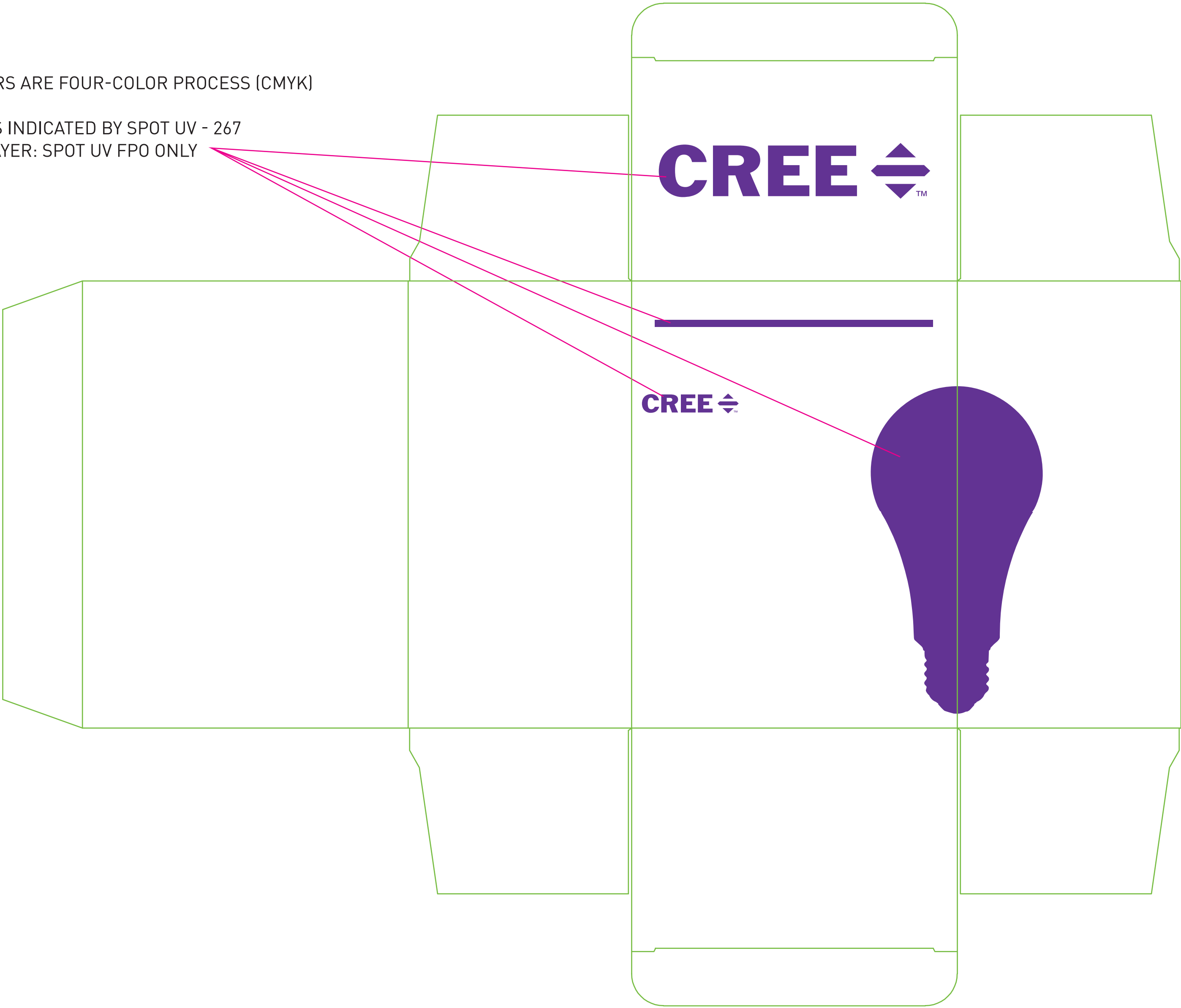




PROJECT	DIELINE	FILE	CONTACT	FONTS	IMAGES	COLOR
<b>DESCRIPTION</b> Tango A21 100W Soft White package design <b>JOB NO</b> CRC1147r2 <b>FILE NAME</b> CRC1147r2 Tango A21 100W SW pkg.ai <b>DATE</b> 09.20.2018 <b>PREPARED FOR:</b> Cree, Inc.	<b>NO.</b> CB A21-1PCS.pdf <b>SIZE</b> Dimensions not available on supplied dieline <b>DATE</b> 10.24.2017 <b>SOURCE</b> Dangoo	<b>APPLICATION</b> Illustrator CC <b>TRIM</b> Dimensions not available on supplied dieline <b>BLEED</b> None <b>NOTES</b> See reference PDF	<b>PROJECT MANAGER</b> Louise LaRochelle W 919.872.8172 M 919.426.7581 louise.larochelle@btbmarketing.com  <b>ALTERNATE CONTACT</b> Geoff Dunkak W 919.872.8172 M 919.302.5149 geoff.dunkak@btbmarketing.com	<b>ARTWORK</b> DINOT DINOT-CondBold DINOT-Cond DINOT-CondIta DINOT-CondMedium DINOT-Medium Helvetica 77 Bold Condensed Helvetica Neue Bold Helvetica Neue LT Std 55 Roman  <b>CALLOUTS</b> Arial Bold Arial Webdings	<b>CMYK</b> A21_Standing_Unlit_6x6_With.Glow.tif Spring-Launch-Comparison-Image TALL 10.2.17.psd	<b>PROCESS</b> Cyan Magenta Yellow Black  <b>SPOT UV INDICATOR</b> Spot UV - 267

ALL COLORS ARE FOUR-COLOR PROCESS (CMYK)

SPOT UV IS INDICATED BY SPOT UV - 267  
ON THE LAYER: SPOT UV FPO ONLY



PROJECT	DIELINE	FILE	CONTACT	FONTS	IMAGES	COLOR
<b>DESCRIPTION</b> Tango A21 100W Soft White package design	<b>NO.</b> CB A21-1PCS.pdf	<b>APPLICATION</b> Illustrator CC	<b>PROJECT MANAGER</b> Louise LaRochelle W 919.872.8172 M 919.426.7581 louise.larochelle@btbmarketing.com	<b>ARTWORK</b> DINOT DINOT-CondBold DINOT-Cond DINOT-CondIta DINOT-CondMedium DINOT-Medium Helvetica 77 Bold Condensed Helvetica Neue Bold Helvetica Neue LT Std 55 Roman	<b>CMYK</b> A21_Standing_Unlit_6x6_With.Glow.tif Spring-Launch-Comparison-Image TALL 10.2.17.psd	<b>PROCESS</b> <div><div></div> Cyan</div> <div><div></div> Magenta</div> <div><div></div> Yellow</div> <div><div></div> Black</div>
<b>JOB NO</b> CRC1147r2	<b>SIZE</b> Dimensions not available on supplied dieline	<b>TRIM</b> Dimensions not available on supplied dieline	<b>ALTERNATE CONTACT</b> Geoff Dunkak W 919.872.8172 M 919.302.5149 geoff.dunkak@btbmarketing.com	<b>CALLOUTS</b> Arial Bold Arial Webdings		<b>SPOT UV INDICATOR</b> <div><div></div> Spot UV - 267</div>
<b>FILE NAME</b> CRC1147r2 Tango A21 100W SW pkg.ai	<b>DATE</b> 10.24.2017	<b>BLEED</b> None				
<b>DATE</b> 09.20.2018	<b>SOURCE</b> Dangoo	<b>NOTES</b> See reference PDF				
<b>PREPARED FOR:</b> Cree, Inc.						

# EXPERIENCE EXCEPTIONAL

RICH COLORS  
90+ CRI

LONGER LIFE  
22+ YEARS\*

10 YEAR 100%  
GUARANTEE

SHATTER  
PROOF

**CREE** 

SOFT WHITE 2700K

**100**W

REPLACEMENT

**LED**

USES 17W

**1 BULB**

**BEAUTIFUL  
LIGHT**  
FOR RICH,  
NATURAL  
COLORS



Brightness

**1600**  
lumens

Estimated  
Energy Cost

**\$2.05**  
per year






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We believe you deserve exceptional lighting in your home.

Our LED bulbs work better and last longer. But if we don't live up to your expectations for any reason, let us know and we'll make it right.

It's that simple.



**100% SATISFACTION GUARANTEE:** This product is guaranteed to give 100% performance satisfaction subject to the Cree limited warranty, the complete terms of which can be found at [creebulb.com/warranty](http://creebulb.com/warranty). If within 10 years from the date of purchase you are not completely satisfied with the performance of this product, please contact Cree for replacement instructions.

**Call** 1-866-924-3645

**Email** [bulbs@cree.com](mailto:bulbs@cree.com)

**Online** form at [creebulb.com/warranty](http://creebulb.com/warranty)

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Beautiful high CRI light delivers  
**exceptional color quality**—  
making the colors in your home  
appear vibrant, rich & natural.



Text CREE to 31996  
for a short video on the difference  
exceptional light will make in your home

This is a one-time message. No additional messages  
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**90+**  
CRI LIGHT**RICH, VIBRANT &  
NATURAL COLORS****22+**  
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for compatible dimmers**100% SATISFACTION  
GUARANTEE****CREE** ™

**CAUTIONS & WARNINGS:** Not intended for use with emergency exit fixtures or emergency lighting. Risk of electric shock or burns. Turn power off and let cool before inspection or replacement. Do not open – no user serviceable parts inside. Use only on 120 volt AC circuits. Do not use if product is cracked, broken or missing pieces, even if lamp continues to light. Suitable for use in operating environments ranging between -25°C and +45°C (-13°F and +113°F). Suitable for damp locations, but not for use where exposed directly to weather or water. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Visit [creebulb.com](http://creebulb.com) for more information.

Not for use in totally enclosed and recessed fixtures.  
120 V~ /60 Hz

**Lighting Facts** Per Bulb**Brightness** 1600 lumens**Estimated Yearly Energy Cost** \$2.05Based on 3 hrs/day, 11¢/kWh  
Cost depends on rates and use**Life**Based on 3 hrs/day **22.8 years****Light Appearance**

Warm 
▲
 Cool

2700 K

**Energy Used** 17 watts

\*Based on 3 hours per day. 25,000 hour rated lifetime.

YGR Document 120-9 Filed 02/14/20

PCD01861 REV C



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PLEASE  
RECYCLE



CA RESIDENTS WARNING:  
Cancer and Reproductive Harm  
[www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

TA21-16027MDFH25-12DE26-1-11

**PROOF OF PURCHASE**





**Appendix J: Raw Survey Data**

# **Appendix J**

**Spreadsheet produced in**  
**Native Format**